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Report

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Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene Resulting from Simulated Home Use of Moth Cakes

By

Bernardo Z. Hernandez¹, Research Scientist I
Don Richmond¹, Research Scientist II
Weiyang Jiang¹, Research Scientist I
Scott Fredrickson², Agricultural Chemist III

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1. California Department of Pesticide Regulation
Worker Health and Safety Branch
1001 I Street
Sacramento, CA 95814
2. California Department of Food and Agriculture
Center for Analytical Chemistry
Worker Health and Safety Unit
3292 Meadowview Road
Sacramento, CA 95832

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF PESTICIDE REGULATION
1001 I STREET, SACRAMENTO, CA 95814

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Abstract

p-Dichlorobenzene (*p*-DCB) is a fumigant insecticide commonly used in indoor areas for moth control. The labels for these moth control products provide minimum application rates and no information on the maximum rates. In addition, data is not available for indoor exposure of children and adults after short- and long-term exposure to *p*-DCB. For this study, we used hotel rooms to simulate the application of *p*-DCB in residential settings by using the hotel bathroom as a surrogate closet. We placed moth cakes (99.89 % *p*-DCB) in hotel bathrooms during two seasons (summer and fall) and under two different treatment settings (bathrooms with the door open and the bathrooms with the door closed). Based on the area of the hotel bathroom and the minimum label application rate, we placed 13 moth cakes in the bathroom of each treated room. We then measured *p*-DCB air concentrations twice a day in both the bathroom and the untreated adjacent bedroom and *p*-DCB concentrations in wool fabric in the treated bathrooms at the end of the seven day treatment period. During the two seasons, we monitored six hotel rooms with treated bathrooms (three each with the bathroom door open and the bathroom door closed).

The results show that sublimation of *p*-DCB is temperature related. The temperature measured in the bedrooms was lower in the fall than the summer. Corresponding to the difference in room temperature, the average *p*-DCB air concentrations in the fall were about 40% lower in the bathroom and bedroom of hotel rooms with the bathroom door open and 33% lower in the bathrooms with the bathroom door closed. We found no seasonal difference in the bedrooms adjacent to bathrooms with closed doors. In general, *p*-DCB air concentrations quickly increased in the treated rooms 12 to 24 hours after treatment, and leveled off throughout the remainder of the seven day experimental period. An open bathroom door allowed *p*-DCB to quickly diffuse into the bedroom. The average *p*-DCB concentrations in the bathroom and bedroom were similar throughout the 7-day sampling period. A closed bathroom door significantly limited *p*-DCB diffusion from the treated bathroom to the untreated bedroom. *p*-DCB concentrations in the treated bathroom with the door closed were about 10 to 40 times higher than in the untreated bedroom. From Day 1, the average air concentration of *p*-DCB measured in the treated bathroom with the door closed was close to 50 parts per million (ppm), the lower limit for painful irritation to the eyes and nose. From Day 2 through the end of the study on Day 7 during the summer trial period, the air concentrations were close to or above the 75 ppm Permissible Exposure Limit (PEL, 8-hour time-weighted average) for workers set by the National Institute for Occupational Safety and Health (National Institute for Occupational Safety and Health (NIOSH), 2010). The average air concentration in the closed bathrooms during the fall trial period leveled out around 50 ppm until the last day of the study. There is no exposure limit established for intermittent exposures in residential settings lasting a week or more.

A strong positive linear correlation (Pearson's r : 0.99) was observed between the average *p*-DCB concentrations of the air and wool fabric samples collected from the bathroom floor of the treated rooms on Day 7. This would suggest that within the range of air concentrations measured during this study, the wool fabric was not saturated with *p*-DCB.

This study provides useful information for assessing risks of *p*-DCB exposure in indoor environments. The information may also be useful in improving the label information for moth repellent products containing *p*-DCB, including maximum label rate, and methods and length of time to aerate clothing.

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Introduction

In California, *p*-Dichlorobenzene (*p*-DCB) is a fumigant insecticide and the active ingredient in some moth repellent products registered for indoor use. *p*-DCB found in indoor air originates mainly from moth repellents used to protect clothing. *p*-DCB sublimates from solid formulations such as balls, cakes, crystals, bars, and flakes. The *p*-DCB gas kills moths and moth larvae. The product labels provide minimum application rates, but do not provide a maximum application rate (Kelly, 2009).

Most people recognize the odor of *p*-DCB and can smell it in the air at levels as low as 0.12 parts per million (ppm) (National Institutes of Health (NIH), 2010). *p*-DCB vapor can irritate the eyes and nasal passages, and cause nausea, vomiting, dizziness, fatigue, and headaches (Hathaway *et al.*, 1991; National Institute of Occupational Safety and Health (NIOSH), 2010; United States Environmental Protection Agency (US EPA), 2000; Willert Home Products, 2005). At 50 – 80 ppm the eye and nose irritation is painful and becomes severely painful at 160 ppm (Hathaway *et al.*, 1991). Prolonged *p*-DCB contact with skin can cause a burning sensation (Hathaway *et al.*, 1991). There is no evidence that moderate use of common household products that contain *p*-DCB will result in harmful effects to your health. Harmful effects, however, may occur from high exposures (Agency for Toxic Substances and Disease Registry (ATSDR), 2002). There is no data available on the short and long term exposures to children and adults when *p*-DCB is used according to the label.

There is inadequate information concerning potential *p*-DCB exposure in residential settings from use of moth cakes. Worker Health & Safety (WHS) scientists designed this study to quantify potential inhalation exposure by measuring *p*-DCB concentrations in air resulting from specified uses found on labels of moth repellent products containing *p*-DCB. We also measured uptake (absorption) of *p*-DCB by wool fabric to quantify potential dermal exposure from articles (such as clothing and blankets) stored in air-tight containers with *p*-DCB.

We used hotel rooms to simulate the application of *p*-DCB in closets, using the bathroom as a surrogate closet. Hotel management allowed us to use rooms with identical floor plans and furniture to simulate occupied residences. We monitored rooms during two different time periods for seven days, the minimum amount of treatment time according to the label. We collected and analyzed ambient air and wool fabric samples to measure *p*-DCB concentrations and residues, respectively.

Materials and Methods

Trial Periods

We considered variation in ambient temperatures and conducted the study during two seven day periods, one during the summer (August 23 – 30, 2011) and the other during the fall (November 1 – 8, 2011).

Geographical selection criteria

We conducted the study in Salinas, California to comply with the recommendation of WHS toxicologists to carry out the study in an area with a mild Mediterranean climate. The monthly average temperature highs of Salinas range from 63 to 75°F.

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Hotel Selection Criteria

1. Hotel management: Willingness to allow the use of *p*-DCB in two hotel rooms for the eight day study period.
2. Age of Hotel: A hotel less than 10 years old with sealed windows to minimize passive air leakage.
3. Rooms:
 - a. Identical floor plans
 - b. An independent and non-networked climate control systems that allowed control of individual room temperature without introducing excess make-up air from other rooms, or allowing cross-contamination of adjoining rooms via ventilation ducting.
 - c. Bathroom ventilation and all drains that can be sealed with plastic and painter's tape.
 - d. No known *p*-DCB use in the hotel rooms for 30 days prior to the study.

Number of Rooms

We monitored 14 identical hotel rooms: (1) six rooms with moth cakes hung from the shower curtain rod in the bathroom and the bathroom door closed; (2) six rooms with moth cakes hung from the shower curtain rod in the bathroom and the bathroom door open; and (3) two control rooms with no moth cakes hung in the bathroom. We also used a separate “staging” room to process daily samples and to minimize the risk of contamination to the untreated control room.

Room Measurements

We recorded measurements of the rooms and bathroom and drew room maps (Appendix 1) showing the location of furniture, counters, cupboards, shower, and other significant items/space to confirm that the bedrooms and bathrooms were of the same size and configuration. We measured the area of the bathrooms in cubic feet to determine the number of moth cakes to use in each treated bathroom.

Room Conditions

We turned off the climate control systems (heater/air conditioner) to minimize the movement of air within the bedroom and bathroom. We also sealed and taped the bathroom ventilation outlet, and the drains in the bathroom and kitchenette. We left the furniture in place throughout the room, but covered the beds with two 9-foot by 12-foot sheets of plastic in the bedrooms with treated bathrooms.

Hotel and Hotel Guest Safety Measures

Prior to the start of the study, the Study Director notified hotel management to keep the housekeeping staff out of the seven hotel rooms used for the study. To ensure compliance, we placed “**Do Not Disturb**” hangers on the outside of the door of each hotel room (Photo A).

Photo A. Safety Measures



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Staff Safety Measures

California's Department of Industrial Relations, Division of Occupational Safety and Health (Cal OSHA) set the short-term exposure limit (STEL, 15-minute time weighted average) for *p*-DCB at 110 parts per million (ppm). Based on this STEL and the uncertainty in the amount of time staff may be exposed to *p*-DCB, WHS's certified industrial hygienist set the safety level at 60 ppm for air concentrations in the untreated adjacent bedrooms with treated bathrooms. Air concentrations above 60 ppm *p*-DCB in the bedrooms and bathroom with the open door would trigger decontamination procedures. During the study, WHS's certified industrial hygienist sampled the air in the bedroom and the closed treated bathroom of each hotel room prior to scientists entering the rooms. He used *p*-DCB colorimetric sampling tubes to determine the *p*-DCB air concentrations. The industrial hygienist allowed limited exposure to the *p*-DCB in the closed bathroom, allowing scientists to only crack open the bathroom door, reach inside to either place or retrieve the air sampling equipment, and then quickly close the door. However, he would not allow collection of the wool samples if air concentrations exceeded 60 ppm because he felt the scientists would have to work in the bathroom at unacceptable levels of *p*-DCB.

Background Samples

WHS scientists collected background ambient air samples from the bedrooms of the fourteen hotel rooms to confirm the absence of *p*-DCB prior to the start of the study.

Test Substance

The formulation of *p*-DCB (1,4-dichlorobenzene; CAS No. 106-46-7) used in this study was seven ounce cakes. The moth cakes are marketed by Willert Home Products under the name Reefer-Galler No-Moth[®] Closet Hanger¹ (EPA Reg. No. 1475-157-AA) and contain 99.89 % *p*-DCB. Each product package contains two moth cakes, a hanger, and one canister capable of holding two moth cakes. Prior to the study, the Principal Analytical Investigator (PAI) confirmed the purity of the moth cakes at nearly 100% *p*-DCB.

Application

Using the recommended minimum application rate on the product label, WHS scientists determined that 13 seven-ounce moth cakes were needed to treat a bathroom. We arrived at this amount by dividing the volume of the bathroom (286 ft³) by the volume treated by one moth cake as specified on the label (1 cake treats up to 21.875 ft³). This is equivalent to an application rate of 0.32 ounces *p*-DCB/ ft³.

$$\frac{286 \text{ ft}^3/\text{Bathroom}}{21.875 \text{ ft}^3/\text{cake}} = 13.1 \text{ Moth Cakes/Bathroom}$$

We suspended hanger canisters containing the moth cakes from the shower curtain rod in the bathroom (Photo B). With the exception of one canister, all canisters contained two moth cakes.

¹ Disclaimer: Use of this moth repellent product in the study does not constitute or imply an endorsement of the product by the California Department of Pesticide Regulation or the State of California

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Photo B: Suspended hanger canisters containing the moth cakes



Temperature Measurements

Temperature was measured differently during the two trial periods. For the summer trial period, we recorded the temperature directly from the SKC Low Flow Pumps to the Air Sample Record at the time of sample collection. After the end of the study, the temperatures were recorded in an Excel[®] spreadsheet. For the fall trial period, we placed a temperature logger (Photo C) on the coffee table in each treated room. Each logger recorded the room temperature at preset time intervals (at minimum, every 30 minutes) for the duration of the study. After the end of the study, we downloaded the temperature data from each logger to an Excel[®] spreadsheet.

Photo C. Temperature Logger



Air Samples

Air samples were collected using Anasorb CSC, Coconut Charcoal tubes attached to an SKC Pocket Pump (Model 210-1002) or SKC Low Flow Pump (Models 222-3 and 222-4) with vinyl tubing. Each tube consisted of a primary section containing 400 milligrams (mg) of charcoal and a secondary section containing 200 mg of charcoal. We sampled the air at twelve hour intervals for seven days, starting twelve hours after placement of the moth cakes. Each monitoring period lasted approximately 50 minutes. The flow rate of each low flow pump was set to collect approximately ten liters per sample period, with a minimum of eight liters and a maximum of twelve liters.

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Photo D. Pump Stroke Counter



The single port Pocket Pumps were calibrated to collect 200 milliliters (mL) of air per minute. The pumps record the volume of air sampled (down to 0.01 Liters). The pump's LCD screen displays a direct readout of the sample volume.

The SKC Low Flow Pumps use a stroke counter (Photo D) to indicate the number of times the pump's diaphragm stroked during the sample period. We recorded the stroke count readings at the beginning and end of the sample period. We obtained the stroke count by calculating the difference between the end count and the beginning count. We obtained the volume of air sampled by calculating the product of the stroke count and the pump factor (volume of air per stroke).

At the end of the air sampling period, we removed the tubes from the pumps, capped the ends of the tubes, and placed them in a track-seal bag (Photos E, F). We collected two samples from three sites per room during each monitoring period.

Photo E. Capped Sample Tubes



Photo F. Processed into Track-Seal Bag



The three sites were:

- Five foot level in the bedroom to simulate a typical adult's breathing zone. The pumps were secured with eight inch cable ties to a standard one inch wide Schedule 40 polyvinyl chloride (PVC) pipe stand (Photo G).
- Floor of the bedroom to simulate an infant's breathing zone. The sample site was next to the PVC pipe stand (Photo G) used for the five foot sample site. The air sampling tubes were approximately 7 – 8 inches off the floor.
- Floor of the bathroom (Photo H, above right) to simulate the worst case scenario inside a closet because vapor is heavier than air and settles on the floor. The air sampling tubes were approximately 7 – 8 inches off the floor.

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Photo G. Bedroom Placement

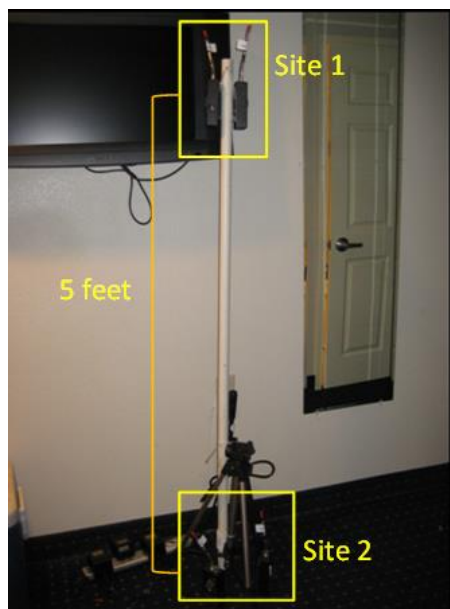


Photo H. Bathroom Placement



Wool Fabric Samples

Prior to the study, saturated atmospheres were generated in a chamber containing wool and cotton to check for absorbency of *p*-DCB. Analysis of the wool and cotton fabrics showed the rate of off-gassing from wool is lower than cotton (S. Fredrickson, personal communication, May 9, 2010). We chose wool fabric for the following reasons: 1) moth cakes are more likely to be used to protect wool fabric from moth damage, and 2) the lower rate of *p*-DCB off-gassing from wool.

Wool fabric samples were cut from wool blankets (wool: 75 % minimum; nylon: 15% maximum; rayon: 15% maximum; other textile fibers: 5% maximum; and non-textile material: 2% maximum). The blankets were machine-laundered in a hot water wash cycle with about five mL of detergent added per load to remove impurities and additives (i.e., sizing, excessive dyes, and fabric finishes) and reduce potential analytical interferences. The blankets were rinsed in warm water, and then machine dried. The wool blankets were cut into 8 x 12 centimeter sample sections. We recorded the weight of each sample section (grams), and wrote it on a tag attached to the sample with a safety pin (Photo I).

We placed nine wool fabric samples in each bathroom prior to the placement of the moth cakes. Three samples were placed at 5-foot, 2-foot, and floor level to measure any variation in *p*-DCB absorption due to height. We hung the 5-foot and 2-foot samples by safety pins from twine strung between two tripods. We laid the wool fabric samples on the floor on aluminum foil to prevent transfer of *p*-DCB to the flooring material. We collected the wool fabric samples from each bathroom on Day 7, the end of the study. Upon collection, each sample was loosely rolled and placed in a pre-labeled 4-ounce glass jar and immediately capped with a Teflon lined plastic cap (Photo J). We took the capped jars to a well-ventilated area in the hotel parking lot where we briefly removed the caps one at a time, added 100 mL of hexane, and immediately recapped the jars. The addition of hexane was to prevent loss of *p*-DCB from the wool fabric through

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volatilization to the air (Fredrickson, 2010). Hexane is used in the analytical method to extract *p*-DCB from the wool fabric.

Photo I. Fabric Samples with Weight Tags



Photo J. Wool Fabric Sample in Jar



Sample Storage

We stored the air samples in track-seal bags in a dedicated refrigerator freezer in one hotel room. We transferred the samples to an insulated cooler on dry ice for transport to the analytical laboratory. Wool fabric samples were stored in insulated coolers on ice. We transported the air and wool fabric samples in separate coolers to the California Department of Food and Agriculture (CDFA) Center for Analytical Chemistry. All samples were stored in the laboratory walk-in freezer and remained frozen until the extraction could be performed.

Sample Chemical Analysis

The CDFA Center for Analytical Chemistry's chemist developed the analytical methods to extract *p*-DCB from the charcoal sorbent tubes and wool fabric samples. He conducted the method validation of *p*-DCB prior to the conduct of the study.

Charcoal sorbent tubes: The analytical method is based on NIOSH method 1003 (NIOSH, 2003). The Charcoal sorbent tubes were kept frozen until time of analysis. For analysis, the chemist broke open the tubes and placed the front and back charcoal sections in separate test tubes containing 10 mL of carbon disulfide. The glass wool plug was included with the front section of charcoal. The extracts were mixed for 10 seconds using a vortex mixer, allowed to stand for 30 minutes, re-vortexed, and then centrifuged. The chemist used an Agilent 6890 gas chromatograph with an Agilent 5972 mass spectrometer detector (GC/MSD) to quantify the amount of *p*-DCB present in the sample. The Limit of Detection (LOD) is 0.2 µg/sample, based on at least a 10:1 noise ratio. The Limit of Quantitation (LOQ) is 0.7 µg/sample (3.5 x LOD).

If analysis of the back section of charcoal indicated that breakthrough had occurred, the results were reported as follows: <10% of the amount in the primary section, the results were combined on the lab sample report; 10 – 25%, the results were combined and the

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breakthrough noted on the lab sample report; > 25% voids the sample (failure) and is noted on the lab sample report.

Laboratory Quality Control: One matrix blank and multiple matrix spikes were analyzed with each set of samples. Matrix spikes generally consisted of four samples, two each at different concentrations.

Wool fabric samples: The glass jars with the wool fabric samples and 100 mL hexane were stored under refrigeration until time of analysis. For the analysis, the wool fabric and hexane were transferred to reflux glassware containing an additional 90 mL hexane, weighed, then refluxed for three hours to extract *p*-DCB residue. The chemist cooled the extract, re-weighed it and added hexane to the extract to maintain volumetric accuracy. After mixing, the chemist removed a sample of the solution for analysis. The chemist used an Agilent 6890 gas chromatograph with an Agilent 5972 mass spectrometer detector (GC/MSD) to quantify the amount of *p*-DCB present in the sample. The Limit of Detection (LOD) is 1.2 µg/sample, based on at least a 10:1 noise ratio. The Limit of Quantitation (LOQ) is 3.6 µg/sample (3 x LOD).

Laboratory Quality Control: One matrix blank and multiple matrix spikes were analyzed with each set of samples. Matrix spikes generally consisted of four samples, two each at different concentrations.

Air Concentration, Estimated Potential Daily Inhalation and Wool Fabric Residue Calculations

When calculating the concentration of *p*-DCB in the air (µg *p*-DCB/Liter air) and wool fabric (µg *p*-DCB/g wool fabric), we included samples with *p*-DCB values between the LOD and LOQ. Samples with *p*-DCB less than the LOD are considered “non-detects” (ND). For non-detects, we used one half the LOD in calculations. The reported values for air samples are listed in Appendices 3 to 8 and wool fabric samples in Appendices 9 and 10.

Air Samples: We calculated the air concentrations of *p*-DCB (µg /Liter (L)) by dividing the results (µg *p*-DCB/sample) by the volume of air sampled (Liters).

$$p\text{-DCB}_{\text{air sample}}(\mu\text{g/L}) = \frac{\mu\text{g } p\text{-DCB/sample}}{\text{Volume of Air Sampled (L)}}$$

We then converted the air concentrations into ppm. We multiplied the air concentration (µg/L) by a conversion factor (24.45) that takes into account the ideal gas law and assumes normal temperature and pressure (Dinardi, 1995), and then divided this value by the molecular weight of *p*-DCB (147.01 grams (g)).

$$p\text{-DCB}_{\text{air concentration}}(\text{ppm}) = \frac{\mu\text{g/L} \times 24.45}{147.01 \text{ g}}$$

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Estimated Potential Daily Inhalation Exposure: We calculated the estimated potential daily inhalation exposure for infants and adults by multiplying the average *p*-DCB concentrations at five feet above the bedroom floor with default inhalation rates of 0.59 m³/Kg/day for infants and 0.28 m³/Kg/day for adults (Andrews and Patterson, 2000).

$$\begin{aligned} \text{Estimated Potential Daily Inhalation Exposure (mg/kg-day)}_{5 \text{ foot level}} \\ = p\text{-DCB Air Concentration (mg/m}^3\text{)} \times \text{Daily Breathing Rate (m}^3\text{/kg-day)} \end{aligned}$$

Wool Fabric Samples: We calculated the amount of *p*-DCB residue in the wool fabric (µg /g wool fabric) by dividing the results (µg *p*-DCB/sample) by the weight of the wool fabric.

$$p\text{-DCB}_{\text{wool fabric}} (\mu\text{g/g}) = \frac{\mu\text{g } p\text{-DCB/sample}}{\text{Weight of Wool Fabric (g)}}$$

Correlation between *p*-DCB Concentrations in the Air and Wool Fabric

We calculated the average *p*-DCB concentrations of the air and wool fabric samples collected from the bathroom floor of the treated rooms on Day 7. We plotted these concentrations using SigmaPlot and analyzed the plots using *Pearson's* analysis to determine whether the concentrations in the air and on wool fabric were correlated. The plots were then fitted to a linear curve. The fitting performance (i.e., linearity) was also used to determine whether the wool fabric has reached the maximum sorption capacity.

End of Study Aeration of Treated Rooms

Photo K. Room Clearance Aeration Fan



After the last sampling period on Day 7, we removed the moth cakes from the bathrooms of the treated rooms and began aeration procedures. We opened the bedroom windows and used the bathroom ventilation fans as well as industrial fans (1/3 horse power with three 30 inch blades) to aerate the hotel rooms for approximately 24 hours. The fans were capable of displacing 8,650 cubic meters or liter volume of air per minute. This is equivalent to 12,460,000,000 liters of air per 24 hours. When the hotel management did not detect an odor or scent of *p*-DCB, they signed a post-study clearance form.

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Field Quality Control Samples:

Field air and wool fabric quality control samples were collected on Day 7 of each treatment period.

Air Samples:

We attached Anasorb CSC Coconut Charcoal tubes to six sampling pumps calibrated to collect 200 milliliters (mL) of air per minute. For each sample, we filled a 100 μ l Pressure-Lok[®] gas syringe with the 20 mg *p*-DCB/ ml hexane for a total of 2 mg *p*-DCB/sample. We injected the solution was injected onto the charcoal in the tube at approximately 5 μ L/second. The air pump was run for 3 minutes. We then removed the tube, capped the ends, and placed the tube it in a track-seal bag.

Wool Fabric Samples:

Field Blanks:

- Hexane: 100 ml hexane was placed in a 4-ounce glass jar. The jar was immediately capped with a Teflon lined plastic cap.
- Wool fabric: Pre-weighed wool fabric was placed in a 4-ounce glass jar with 100 ml hexane. The jar was immediately capped with a Teflon lined plastic cap.

Field Spikes: Pre-weighed wool fabric was placed into a 4-ounce glass jar. *p*-DCB in hexane was added to the wool by either a gas syringe or an ampule (fall treatment period only). For the summer trial period, 10 ml of 0.1 mg *p*-DCB/ml hexane was added. Due to difficulty filling and emptying the 10 ml syringe during the summer trial period, we amended the protocol to use a 1 ml syringe. For the fall trial period, a set of three sealed ampules were also provided for spiking. For each field spike, 1 ml of 1 mg *p*-DCB/ml hexane was added. A total of 1 mg of *p*-DCB was spiked into each sample. 100 ml of hexane was also added to each sample.

- *p*-DCB in hexane was added to the wool fabric and the jar was capped with a Teflon lined plastic cap. After 8 to 10 minutes, the cap was removed, 100 ml of hexane was added to the sample, and the jar was recapped.
- 100 ml of hexane was added to the sample with wool fabric, *p*-DCB in hexane was then added, and the jar capped.
- *p*-DCB in hexane from the ampule added to the wool sample.

Results

The analytical results are shown in Appendices 3 to 10. All pre-application background samples indicated non-detectable *p*-DCB levels in all 14 study rooms. Field blank and field spike samples are shown in Appendices 11 and 12. Laboratory matrix spike and matrix blank samples for air and wool samples are shown in Appendices 13 and 14.

Excluded Air Samples

Of 1,176 air samples taken after placement of the moth cakes, 27 were excluded from analysis: Six for equipment malfunction, two for broken sample tubes, and 19 for human error (18 samples collected in the wrong location and one charcoal tube reversed).

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Room Temperatures

Summer Trial Period

We recorded the room temperature at the end of each sampling period from each SKC Low Flow Pump. These pumps were used in six of the seven hotel rooms. SKC Pocket Pumps were used in one hotel room (treated bathroom with the bathroom door open) so no temperature was collected for that room. Temperature measurements in the rooms ranged from 74° to 82°. The average temperature for the six rooms ranged from 77° to 82°, with the average temperature changing less than three degrees between sampling periods. Room temperature increased about two degrees over the seven day period. We recorded five or six temperature readings per room for five rooms with treated bathrooms.

Fall Trial Period

We only had six temperature loggers and could only record temperatures in six study rooms. We did not record the temperature in a hotel room with a treated bathroom and closed bathroom door. The recorded daily high temperatures (pm) and daily low temperatures (am) for the six rooms differed by as much as four degrees for a given sampling period. Over the course of the seven day sampling period the average daily high temperature declined from 78° to 74°. The average daily low temperature declined from 76° to 72°.

Salinas Area Temperatures

We obtained maximum and minimum daily temperatures from the California Irrigation Management Information System (CIMIS) Station 89 (Salinas South) for both study periods. This station is located southwest of the study site in an agricultural area. For the summer trial period, the daily high temperatures ranged from a high of 80.5°F on Day 0 to a low of 66.8°F on Day 7; the daily low temperatures ranged from a low of 51.9°F to a high of 55.1°F. For the fall sampling period, the daily high temperatures ranged from a high of 80.7 on Day 1 to a low of 56.3 on Day 3; the daily low temperatures ranged from a low of 36.0°F on Day 7 to a high of 45.4°F on Day 5.

p-DCB Air Concentrations in Hotel Rooms with Treated Bathrooms

Tables 1 and 2 show the average *p*-DCB air concentrations per sampling period per site for the hotel rooms with treated bathrooms. Table 1 shows the averages for the summer trial (August 23 - 30, 2011); Table 2 shows the averages for the fall trial (November 1 - 8, 2011).

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**Table 1. Average *p*-DCB Air Concentration per Sampling Period per Site for
Hotel Rooms with treated Bathrooms in the Summer Trial (n = 6)**

Day	AM/ PM	Average <i>p</i> -DCB Air Concentration (Parts Per Million)					
		Open			Closed		
		Bathroom Floor	Bedroom 5 Feet	Bedroom Floor	Bathroom Floor	Bedroom 5 Feet	Bedroom Floor
1	AM	8.1	8.1	7.7	48.4	3.0	3.0
	PM	7.9 ^a	8.4	7.8	63.0 ^a	1.4	1.1 ^a
2	AM	10.5	12.2	10.7	82.2	3.2	3.1
	PM	10.6	11.3	10.3	86.6	2.1	1.9
3	AM	10.0	10.8	10.6	82.8 ^a	2.4	2.4 ^a
	PM	10.0	11.4	10.0	78.1 ^a	1.9 ^a	1.9
4	AM	11.8	14.6	11.8	88.6	2.9	2.9
	PM	10.3	11.6	10.9	77.5	2.1	2.0
5	AM	11.6	13.6	11.6	74.2	2.2	2.4
	PM	11.7	13.4	11.4	90.5	2.1 ^a	2.1
6	AM	12.5	13.6	12.0	86.1	4.7	4.7
	PM	11.6	11.9	12.1	77.8	2.1	2.1
7	AM	13.3	13.9	13.3	89.3	4.0	4.1
	PM	11.9	12.0	12.3	62.5	2.6	2.7

^a n = 5. Sampling periods where one sample result was excluded from the calculations. See Appendix 2 for the reasons for excluding the results.

**Table 2. Average *p*-DCB Air Concentration per Sampling Period per Site for
Hotel Rooms with treated Bathrooms in the Fall Trial (n = 6)**

Day	AM/ PM	Average <i>p</i> -DCB Air Concentration (Parts Per Million)					
		Open			Closed		
		Bathroom Floor	Bedroom 5 Feet	Bedroom Floor	Bathroom Floor	Bedroom 5 Feet	Bedroom Floor
1	AM	5.3 ^a	5.8	5.7	58.5	1.9	1.8
	PM	7.0	7.8	6.8 ^a	72.6	2.1	1.9
2	AM	7.3	7.1 ^a	6.8	61.0	2.2	2.1
	PM	6.7	7.0	7.2	71.5	2.9	2.7
3	AM	6.6	6.9	6.2	50.4	2.8	2.8
	PM	5.9	6.5	6.4	58.3 ^a	2.5	2.7 ^a
4	AM	6.3	5.6	6.3 ^a	49.8 ^a	3.3	3.3 ^a
	PM	6.6	6.8	6.5	46.0 ^a	3.0	3.1 ^b
5	AM	6.6	6.7	6.7	49.8	3.2	3.1
	PM	6.8	7.2	7.4	52.3	3.1	3.1
6	AM	6.0	6.7	6.7	44.3	3.5	3.2
	PM	6.4	7.5	6.6	51.3 ^b	3.4	3.1 ^b
7	AM	5.6	7.1	6.1	38.5 ^b	3.2	3.4
	PM	5.4 ^b	8.1 ^b	6.2	40.2 ^b	3.7	3.7

^a n = 5. Sampling periods where one sample result was excluded from the calculations. See Table S1 for the reason for excluding the results.

^b n = 4. Sampling periods where two sample results were excluded from the calculations. See Table S1 for the reasons for excluding the results.

Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene Resulting from Simulated Home Use of Moth Cakes

Figures 1 - 3 show *p*-DCB air concentrations measured at the different sampling sites in the hotel rooms with the treated bathroom door open. The air concentrations are for the bathroom floor (Figure 1), bedroom floor (Figure 2) and five feet above bedroom floor (Figure 3). Generally, *p*-DCB concentrations were higher in summer than in the fall.

Figure 1. Average *p*-DCB Air Concentrations (± 1 SD) Measured at the Bathroom Floor of Treated Bathrooms with the Bathroom Door Open

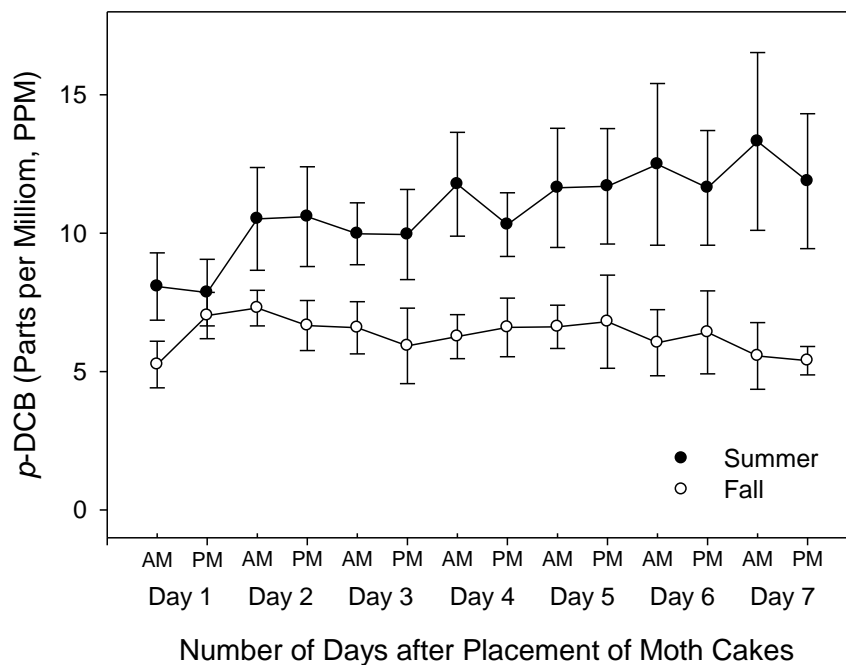
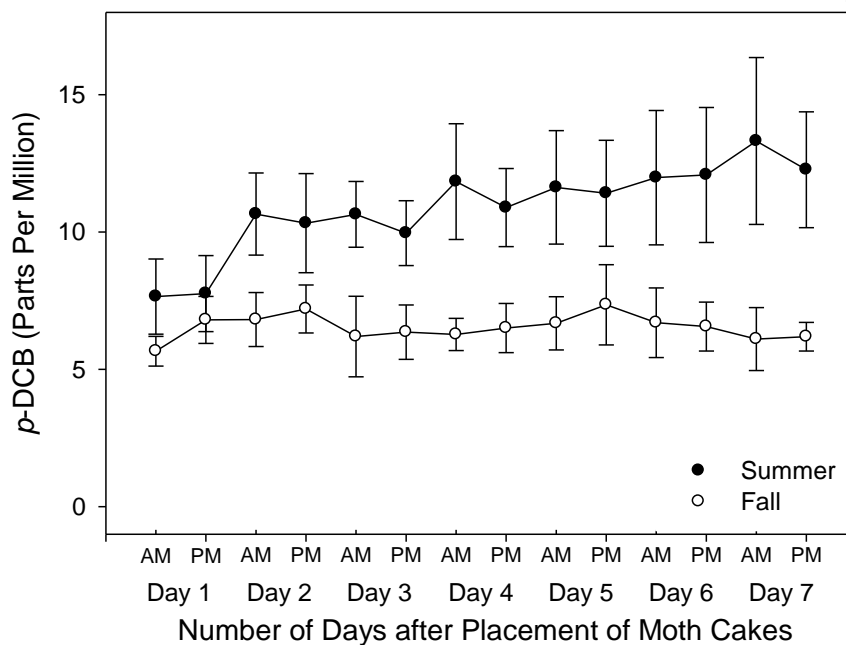
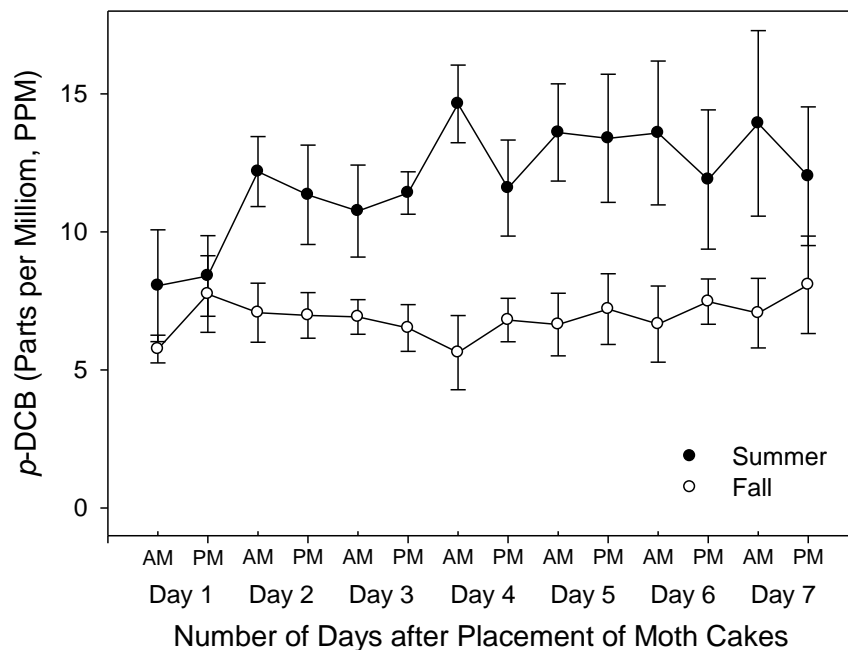


Figure 2. Average *p*-DCB Air Concentrations (± 1 SD) Measured at the Floor of Bedrooms with Treated Bathrooms and the Bathroom Door Open



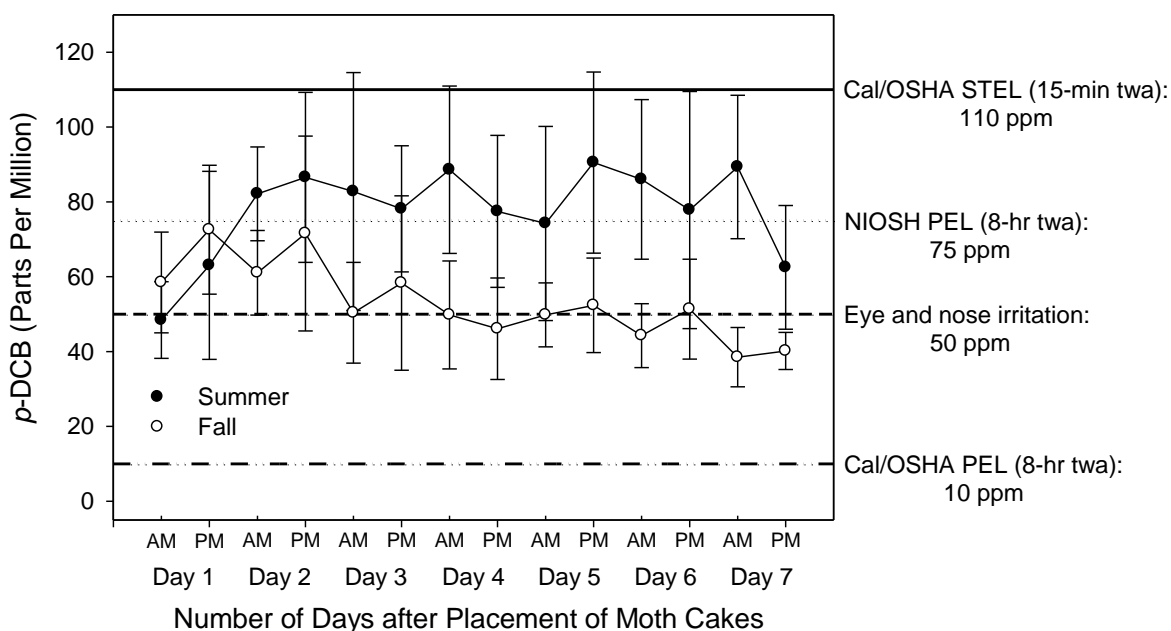
Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene Resulting from Simulated Home Use of Moth Cakes

Figure 3. Average *p*-DCB Air Concentrations (± 1 SD) Measured 5 feet above the Floor of Bedrooms with Treated Bathrooms and the Bathroom Door Open



Figures 4 - 6 show *p*-DCB air concentrations measured at the different sampling sites in the hotel rooms with the treated bathroom door closed. The air concentrations are for bathroom floor (Figure 4), bedroom floor (Figure 5) and five feet above bedroom floor (Figure 6).

Figure 4. Average *p*-DCB Air Concentrations (± 1 SD) Measured at the Bathroom Floor of Treated Bathrooms with the Bathroom Door Closed



Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene Resulting from Simulated Home Use of Moth Cakes

Figure 5. Average *p*-DCB Air Concentrations (± 1 SD) Measured at the Floor of Bedrooms with Treated Bathrooms and the Bathroom Door Closed

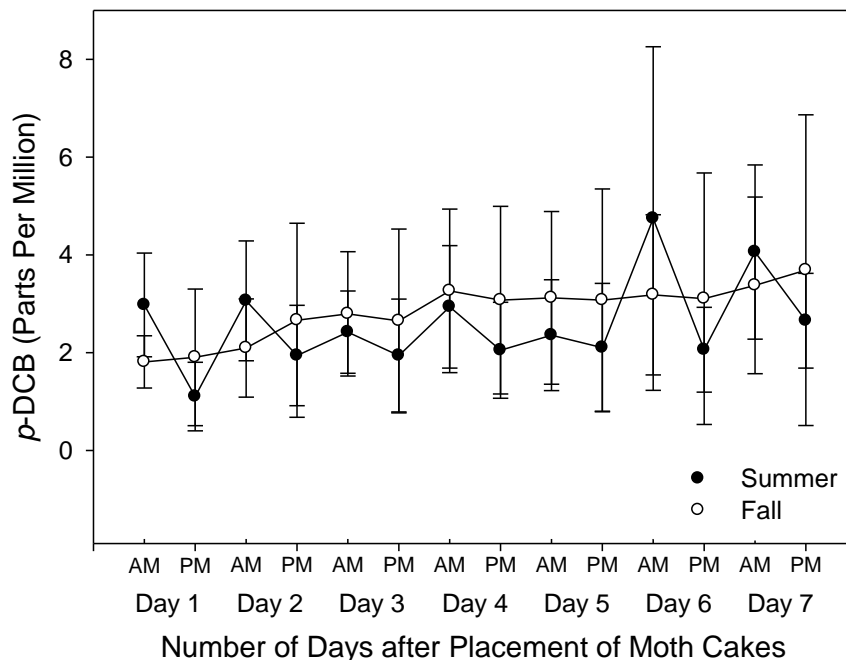
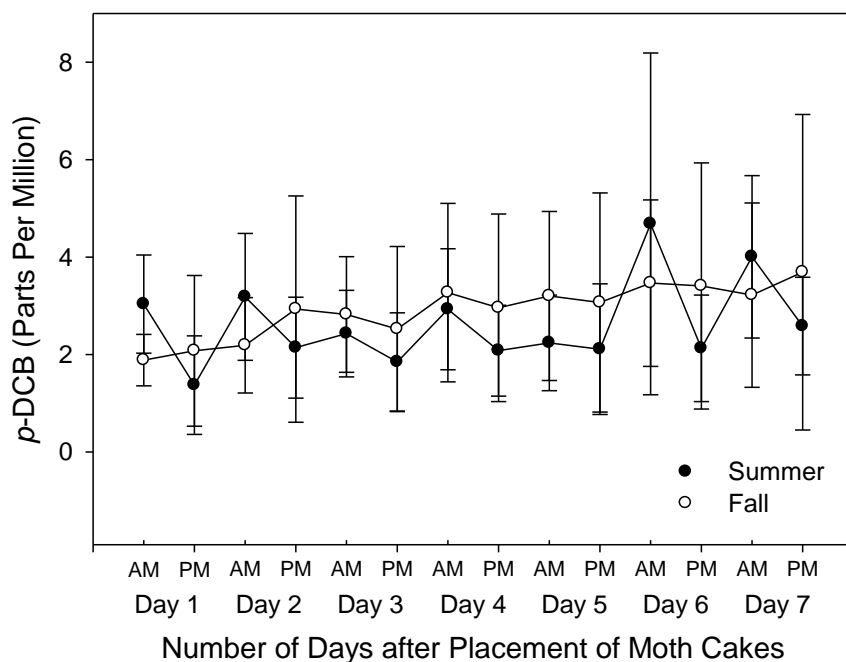


Figure 6. Average *p*-DCB Air Concentrations (± 1 SD) Measured 5 Feet above the Floor of Bedrooms with Treated Bathrooms and the Bathroom Door Closed



Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene Resulting from Simulated Home Use of Moth Cakes

p-DCB Concentrations in Wool Fabric Placed in Treated Bathrooms

Table 3 shows *p*-DCB concentrations in wool fabric collected 7 days after placement of moth cakes in hotel bathrooms. The table includes two room types (i.e., bathroom door open and bathroom door closed), two seasons (i.e., summer and fall), and three heights (i.e., floor, 2-feet, and 5-feet).

**Table 3. Average *p*-DCB Concentrations in Wool Fabric (\pm 1 SD)
Collected 7 Days after Placement of Moth Cakes**

Bathroom Door	Height	<i>p</i> -DCB Concentrations ($\mu\text{g } p\text{-DCB/g Wool Fabric}$)	
		Summer	Fall
Open	Floor	44.3 \pm 9.2	24.7 \pm 5.6
	2 feet	42.6 \pm 5.5	23.1 \pm 3.1
	5 feet	56.3 \pm 5.7	31.4 \pm 7.2
Closed	Floor	169.4 \pm 49.4	130.8 \pm 28.9
	2 feet	179.1 \pm 63.4	150.0 \pm 52.0
	5 feet	182.7 \pm 75.8	123.8 \pm 31.6

Control Room: *p*-DCB Concentrations in the Air and Wool Samples

Air samples

During the summer trial period, 20 of the 84 air samples collected in the untreated (control) room had detectable levels of *p*-DCB that were below the LOQ (0.7 $\mu\text{g/sample}$). The other 64 samples were non-detects. During the fall trial period, all 84 air samples had detectable levels of *p*-DCB with 74 above the LOQ. The highest concentration was 1.93 $\mu\text{g/sample}$ (0.0324 ppm) for a sample on Day 7 at the five foot level in the bedroom.

Wool Samples

During the summer trial period, all nine wool samples collected on Day 7 had non-detectable concentrations of *p*-DCB. For the fall trial period, all nine wool samples had detectable levels of *p*-DCB that were below the LOQ (3.6 $\mu\text{g/sample}$).

Field Quality Control Samples

Air samples

Field Spikes: The results of the six spiked air samples for the summer trial period ranged from 88.0 to 103.7% recovery from the charcoal tubes. The results of the six spiked air samples for the fall trial period ranged from 97.8 to 106.4% recovery from the charcoal tubes.

Wool Samples

Field Blanks. The results of the field blanks of only hexane showed no detectable *p*-DCB. The field blanks with wool and hexane showed no detectable *p*-DCB during the fall trial period and small amounts during the summer period. One sample had 3.76 μg , just above

Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene Resulting from Simulated Home Use of Moth Cakes

the LOQ of 3.6 µg. The other two samples had Two of the samples had detectable amounts of *p*-DCB below the LOQ.

Field Spikes. The results of the spiked wool samples for the summer trial period ranged from 89.4 to 91.4% recovery from the wool fabric. The results of the spiked wool samples for the fall trial period ranged from 90.7 to 97.4% recovery from the wool fabric.

Laboratory Quality Control Samples

Air samples

Matrix Blanks: All matrix blanks had no detectable levels of *p*-DCB.

Matrix Spikes: The recoveries for the matrix spikes ranged from 80.7 to 106.9%, within the acceptable range (70 to 120%) for matrix spikes.

Wool Samples

Matrix Blanks: All matrix blanks had no detectable levels of *p*-DCB.

Matrix Spikes: The recoveries for the matrix spikes ranged from 92.2 to 113.8, within the acceptable range (70 to 120%) for matrix spikes.

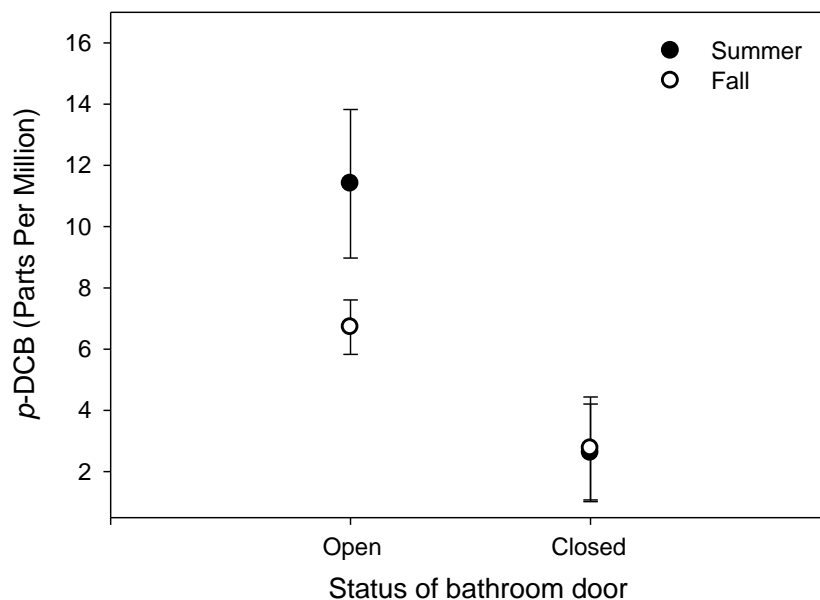
Discussion

p-DCB Air Concentrations in Hotel Rooms with Treated Bathrooms

Figure 7 compares the average *p*-DCB concentrations for the combined sampling sites in the bedrooms between the two seasons, and between treated hotel rooms with the bathroom door open or closed. Higher average *p*-DCB air concentrations were found in the bedroom of the hotel rooms with the bathroom door open during the summer than in the fall. There was no apparent seasonal difference in *p*-DCB air concentrations in the bedroom of the hotel rooms with the bathroom door closed. Higher average *p*-DCB concentrations were found in the bedroom of the hotel rooms with the bathroom door open than the bedroom of hotel room with the bathroom door closed.

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Figure 7. Average *p*-DCB Air Concentrations (± 1 SD) by Season for the Combined Sampling Sites in the Bedrooms with Treated Bathrooms



Figures 8 and 9 compare *p*-DCB air concentrations in the summer and fall between the bathroom floor and bedroom floor in hotel rooms with treated bathrooms and the bathroom door open. The *p*-DCB air concentrations were similar between bathroom floor and bedroom floor. The concentrations in the rooms during the summer trial period were similar to those found in the pilot study (Hernandez *et al.*, 2013). Although the average *p*-DCB air concentrations during the fall trial period were similar between sample sites, the results were about 40% lower than the concentrations found during the summer trial period.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Figure 8. Comparison of Average *p*-DCB Air Concentrations (+ 1 SD) between the Bathroom Floor and Bedroom Floor in Rooms with Treated Bathrooms and the Bathroom Door Open, Summer

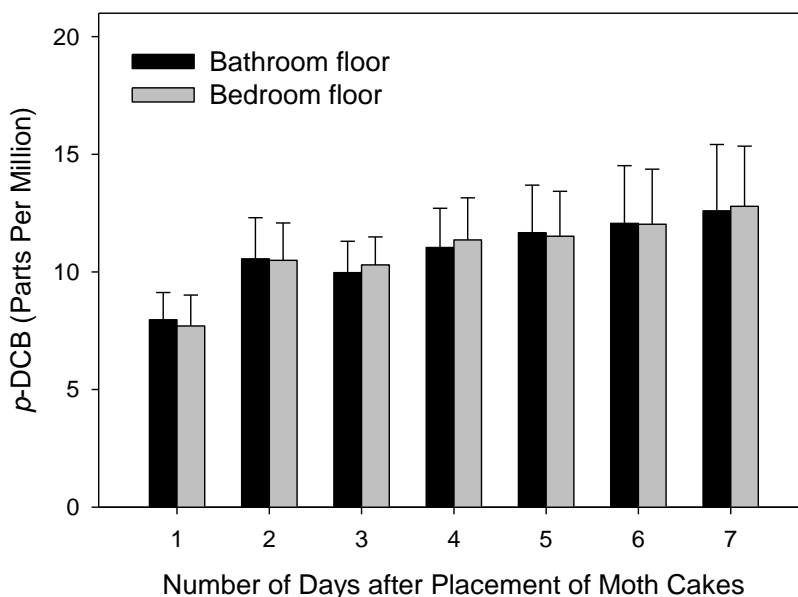
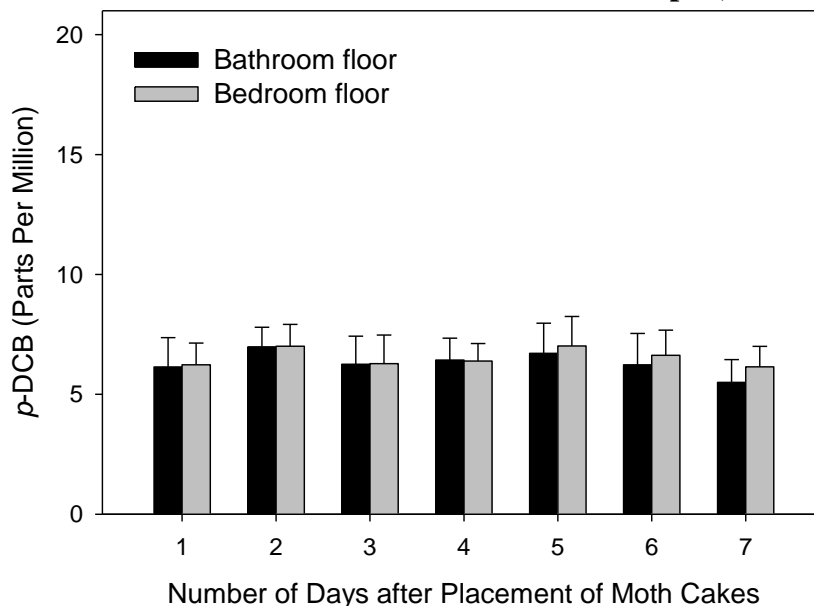


Figure 9. Comparison of Average *p*-DCB Air Concentrations (+ 1 SD) between the Bathroom Floor and Bedroom Floor in Rooms with Treated Bathroom and the Bathroom Door Open, Fall



Figures 10 and 11 compare *p*-DCB air concentrations in the summer and fall between the bathroom floor and bedroom floor in hotel rooms with treated bathrooms and the bathroom door closed. The *p*-DCB air concentrations in the bathrooms during the summer trial period were similar to those found in the pilot study (Hernandez *et al.*, 2013). However, during the fall trial period, the *p*-DCB air concentrations in the bathroom were about two-thirds those found in the

Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene Resulting from Simulated Home Use of Moth Cakes

summer trial period. The concentrations in the bedroom were similar during the two study periods. For rooms with bathroom door closed, the *p*-DCB air concentrations found in the bathroom were 10 to 40 times higher than the bedroom.

Figure 10. Comparison of Average *p*-DCB Air Concentrations (+ 1 SD) between the Bathroom Floor and Bedroom Floor in Rooms with Treated Bathrooms and the Bathroom Door Closed, Summer

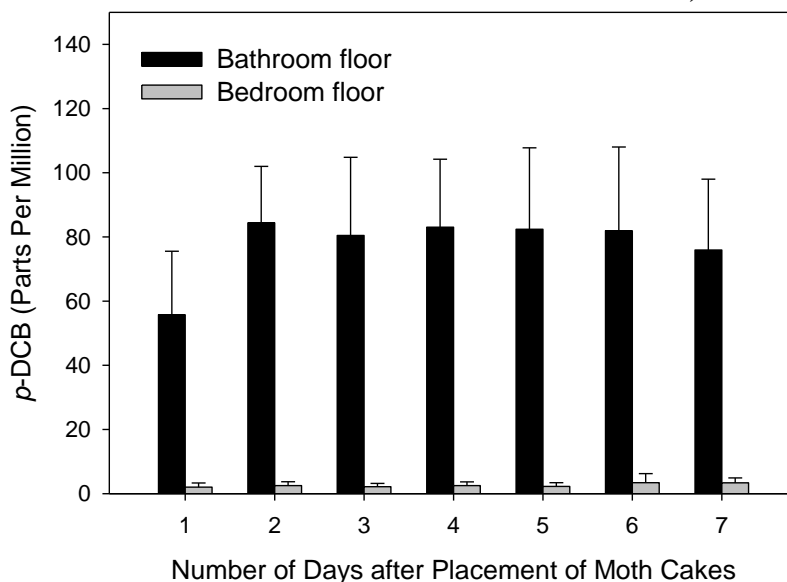
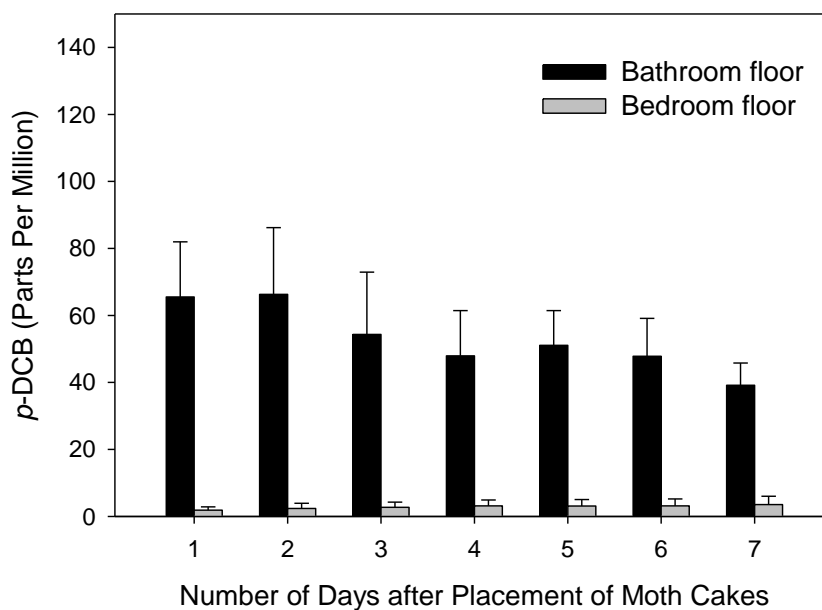


Figure 11. Comparison of Average *p*-DCB Air Concentrations (+ 1 SD) between the Bathroom Floor and Bedroom Floor in Rooms with Treated Bathrooms and the Bathroom Door Closed, Fall



Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene Resulting from Simulated Home Use of Moth Cakes

From Day 1, the average air concentration of *p*-DCB measured on bathroom floor was close to or exceeded 50 ppm (Figure 4), the lower limit for painful irritation to the eyes and nose (Hathaway *et al.*, 1991). During the summer trial period, from Day 2 through the end of the study on Day 7, the air concentrations were close to or above the 75 ppm Permissible Exposure Limit (PEL, 8-hour time-weighted average) set by the NIOSH (NIOSH, 2010). The PEL values are occupational health standards, and the PEL for *p*-DCB is intended to protect workers from potentially harmful exposures. Laboratory animal studies have shown *p*-DCB is carcinogenic in mice, but the relevance of these studies to humans has not been determined (International Agency for Research of Cancer, 1999; NIH, 2014). For both long-term and acute exposures, Cal OSHA has established the following limits for *p*-DCB that are enforceable in California workplaces: a PEL of 10 ppm; a short-term exposure limit (15-minute time-weighted average) of 110 ppm; and a ceiling limit of 200 ppm (California Department of Industrial Relations, 2014). For residential exposures, California's Office of Environmental Health Hazard Assessment (OEHHA) developed a Chronic Reference Exposure Level (REL) of 0.1 ppm based on effects including reduced body weights and food consumption; tremors; nasal and ocular discharge; increased liver and kidney weights from a 7-week study conducted in rats (OEHHA, 2000). The REL incorporates several uncertainty factors to extrapolate toxicity study data to a health protective level for people exposed to airborne concentrations. Chronic RELs are provided to help assess risks of continuous exposures for up to a lifetime. OEHHA has not developed a REL for acute exposures to *p*-DCB. There is also no exposure limit established for intermittent exposures in residential settings lasting a week or more. Small children may play in or near *p*-DCB treated areas such as closets. Their higher breathing rate and lower body weight may make them more susceptible to adverse health effects from exposure to *p*-DCB vapors.

Estimated Daily Inhalation Exposure

p-DCB vapor in the air can be inhaled. The potential daily exposure from breathing *p*-DCB is determined by the *p*-DCB air concentration ($\mu\text{g}/\text{m}^3$) and daily breathing rate (m^3/day). A person's breathing rate varies according to overall health, physical fitness, geographic altitude and amount of physical exertion. Breathing rate while at rest is much slower than during intense physical activity. Breathing rates also vary between age groups (US EPA, 2011).

We used the *p*-DCB air concentrations at five feet above the bedroom floor to estimate the daily inhalation exposure because this height is more representative than the floor for likely exposure to all age groups with the exception of the 0 – 2 age group.

The estimated daily inhalation exposure results for rooms under the two treatment settings (bathrooms with the doors open and bathrooms with the door closed) are shown in Table 4. For each treatment setting, we calculated the estimated daily inhalation for both summer and fall. The highest risk was observed in the bedrooms with the bathroom door open during the summer. The room temperatures were higher during the summer than the fall. Higher room temperatures increase the rate of sublimation (Shinohara, *et al.*, 2007) and the amount of *p*-DCB that can be dispersed from the bathroom to the bedroom.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Table 4. Estimated Daily Inhalation Exposure of *p*-DCB (mg/kg-day) for Children and Adults by Season and Treatment Setting (Rooms with Bathroom Door Open and Closed) Using Average *p*-DCB Concentrations Measured at 5 Feet above the Bedroom Floor

	Estimated Daily Inhalation Exposure (mg/kg-day)			
	Summer		Fall	
	Open	Closed	Open	Closed
Infants	51.8	16.7	28.7	13.1
Adults	24.6	7.9	13.6	6.2

p-DCB Concentrations in Wool Fabric Placed in Treated Bathrooms

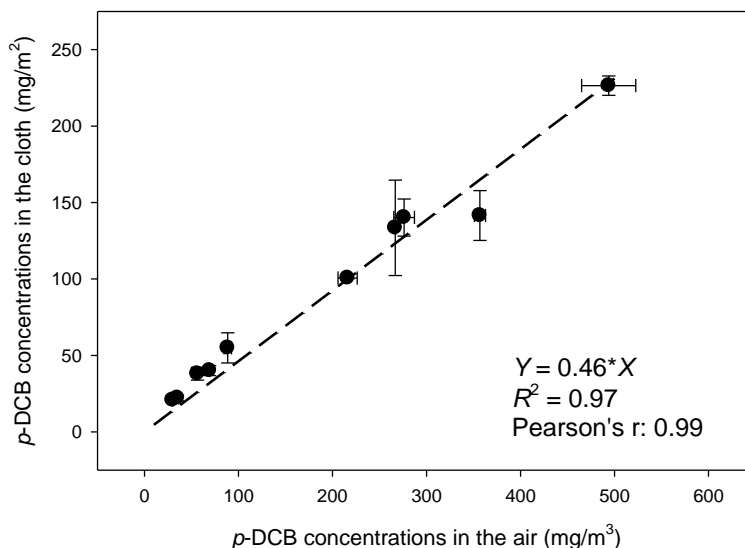
Higher *p*-DCB concentrations were found in the wool fabric in the bathrooms with the bathroom doors closed than the bathrooms with the bathroom door open. This is also where highest *p*-DCB air concentrations were found. Similarly, slightly higher *p*-DCB concentrations were seen in the wool fabric in summer than in fall. For wool fabric at different heights from the same room type, the concentrations were similar.

Correlation between *p*-DCB Concentrations in the Air and Wool Fabric

The average *p*-DCB concentrations of the air and wool fabric samples collected on Day 7 from the bathroom floor of ten treated rooms were plotted and analyzed using Pearson's analysis to determine whether the concentrations in the air and on wool fabric were correlated. Two rooms from the fall study were not included in this analysis because the laboratory analysis of the air samples indicated that at the time of sampling, the sampling equipment labeled for a bathroom with an open door was switched with sampling equipment labeled for a bathroom with a closed door. The results show a correlation between the air and the wool fabric *p*-DCB concentrations (Figure 12). A strong positive linear correlation (Pearson's *r*: 0.99) was observed suggesting that within the range of air concentrations measured during the study, the wool fabric was not saturated with *p*-DCB.

Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene Resulting from Simulated Home Use of Moth Cakes

Figure 12. Average *p*-DCB Concentrations in the Air (± 1 SD) and on the Wool Fabric (± 1 SD) Measured on the Bathroom Floor on Day 7 (n=10)^a



^a: Two rooms from the fall study were not included due to possible switching of samples at the time of sampling.

Control Room: *p*-DCB Concentrations in the Air and Wool Samples

In the pilot study (Hernandez *et al.*, 2013), we used the control room as a staging room for handling samples. The results from that study showed *p*-DCB in the air and wool samples from the control room. The highest air concentration was 9.14 µg/sample. The highest wool sample was 3.29 µg/sample, which is below the LOQ of 3.6 µg/sample. For this study, we had a dedicated control room in an effort to prevent *p*-DCB from being introduced into the control room and possibly contaminating samples. We also assigned one scientist to conduct the sampling in the control room. The scientist only entered the control room during sampling periods and was not allowed to enter rooms with treated bathrooms. No other scientist entered the control room during the study. Despite these measures, *p*-DCB was still found in the control room samples. However, the *p*-DCB levels were lower than those found in the pilot study. The highest air concentration was 1.93 µg/sample during the fall trial period. The wool samples were all below the LOQ.

The level of *p*-DCB found in the control room was higher during the fall trial period than the summer trial period. This is contrary to the results found in the treated rooms where the levels of *p*-DCB were lower in the fall. We believe that these results could be related to the ventilation practices of the hotel and discussed these practices with the hotel management. According to them, the hallways are air conditioned during the summer months for the comfort of the hotel guests, but are not heated or air conditioned during other times of the year. Air conditioning results in air exchange in the hallways and may reduce the amount of *p*-DCB in the hallways that can move into the control room.

Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene Resulting from Simulated Home Use of Moth Cakes

Room Temperatures

For the summer trial period, temperature was recorded by the SKC Pocket Pumps. During the study period, we noticed some inconsistencies with the temperature recorded by some of the pumps. In some cases, the temperature was more than five degrees Fahrenheit lower than the temperature recorded by other pumps in the same room. Some of these pumps were only a few inches apart. For this reason, we used temperature loggers in the rooms during the fall trial period. We only had six temperature loggers available so we did not record the temperature in one hotel room with a treated bathroom and the bathroom door closed. When comparing the temperatures for the summer and fall sampling periods, we excluded the low summer period temperatures ($> 5^{\circ}\text{F}$) from the comparison.

We compared temperatures during the summer and fall sampling periods. At the beginning of the study periods, the average room temperatures during the summer sampling period were about two degrees warmer than the fall sampling period. While the room temperatures in the summer increased about two degrees over the seven day sampling period, the room temperatures in the fall decreased by about six degrees over the same period. The Salinas area temperatures recorded by CIMIS Station 89 during the fall period reflect the decrease in room temperature.

Air Samples Excluded from Analysis

During sampling periods, scientists placed six air sample pumps in each of six rooms with treated bathrooms and one control room. Two pumps were placed in three locations within each room. We collected 1,176 air samples from the rooms during the study. Of these, 27 samples were excluded from analysis. Six were due to pump malfunctions, two samples were broken, one sample had a reversed charcoal tube, and 18 were due to pump placement errors. Given the short amount of time allowed for pump placement in the six rooms with treated bathrooms, pump placement errors occurred. This error occurred eight times; seven involved a pump switch between the bedroom and bathroom of a room with a treated bathroom and the bathroom door closed, and once when the pairs of samples were switched between rooms with treated bathrooms – one with the bathroom door open and one with the bathroom door closed. Although we planned to have three scientists put out the sample pumps, unexpected absences on a few occasions resulted in only two scientists placing the pumps and may have contributed to pump placement errors.

Conclusions

The objectives of this study were to measure *p*-DCB in air and wool fabric and to determine potential *p*-DCB exposure to humans. We measured levels of *p*-DCB in indoor air to determine potential inhalation exposure. We also measured uptake (absorption) of *p*-DCB by wool samples to determine potential exposure from articles (such as wool clothing and blankets) stored with moth repellants containing *p*-DCB. We conducted the study in hotel rooms under two different treatment settings (bathrooms with the doors open and bathrooms with the door closed) during two seasons (Summer and Fall).

We measured the *p*-DCB air concentrations in both the bedroom and bathroom of each treated room. We found higher *p*-DCB air concentrations during the summer in the bathroom of hotel rooms under both treatment settings and in the bedroom of hotel rooms with treated bathrooms

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and the bathroom door open. We found no seasonal difference in the bedroom of hotel rooms with treated bathrooms and the bathroom door closed. The higher *p*-DCB concentrations would be expected during the summer period because the higher room temperatures would cause the *p*-DCB to sublime from a solid to a vapor at a higher rate (Shinohara, *et al.*, 2007). For the two different treatment settings, the closed bathroom door prevented most of the *p*-DCB from migrating into the bedroom resulting in higher concentrations in the closed bathroom. The open bathroom door allowed *p*-DCB to move into the bedroom and there was no difference in *p*-DCB concentrations between the bathroom and bedroom.

Everyday activities will fill a home with various odors/scents including unpleasant ones. Odors/vapors attach themselves to various surfaces, such as walls, clothing, furniture, carpets and upholstery. Clothes are very susceptible to absorbing odors (i.e. cigarette smoke) or vapors from their surroundings. These odors/vapors cling to fabric, making it hard to remove them. *p*-DCB is an effective moth repellent because it readily absorbs into clothing, but may pose a health risk to people if the clothing is not aired out before being worn. We collected wool fabric seven days after placement of *p*-DCB moth cakes in the treated bathrooms (doors open and doors closed) to measure the amount of *p*-DCB absorbed by clothing. We found that on Day 7, the higher the concentration of *p*-DCB in the bathroom air, the more *p*-DCB is absorbed into the wool fabric. The results showed higher *p*-DCB concentrations in the wool fabric during the summer. The results also showed higher *p*-DCB concentrations in the bathrooms with the bathroom doors closed. The *p*-DCB concentrations in wool fabric suspended at different heights (floor, 2-feet, and 5-feet) were similar for the same room type and season.

Inhalation of *p*-DCB vapors can cause serious health problems (Hathaway *et al.*, 1991). Labels for products containing *p*-DCB provide the minimum application rate, but no maximum application rate (Kelly, 2009). Consumers who follow label instructions can apply *p*-DCB moth cakes in small contained areas resulting in concentrated levels of *p*-DCB that can diffuse to surrounding areas. Small children have higher breathing rate and lower body weight that potentially make them more susceptible to suffering adverse health effects from exposure to *p*-DCB while playing in or near *p*-DCB treated areas such as closets.

The product labels also do not mention the method and length of time required to air clothing to dissipate *p*-DCB that was absorbed by the fabric. Consumers may wear clothing saturated with *p*-DCB vapors directly from storage. Improper airing of treated clothing indoors may expose others, including small children to *p*-DCB.

This study provides useful information for assessing risks of *p*-DCB exposure in indoor environments. The information may also be useful in improving the label information for moth repellent products containing *p*-DCB, including maximum label rate, and methods and length of time to aerate clothing.

Acknowledgements

We want to express our appreciation to the owners of the hotel for allowing the use of their hotel rooms. We also want to thank the following Branch staff for their participation in the study: George Farnsworth, Harvard Fong, Linda Hall, Emily Lisker, Linda O'Connell, Kathy Orr, Frank Schneider, Parissa Tehrani, Angelica Welsh, and Nino Yanga.

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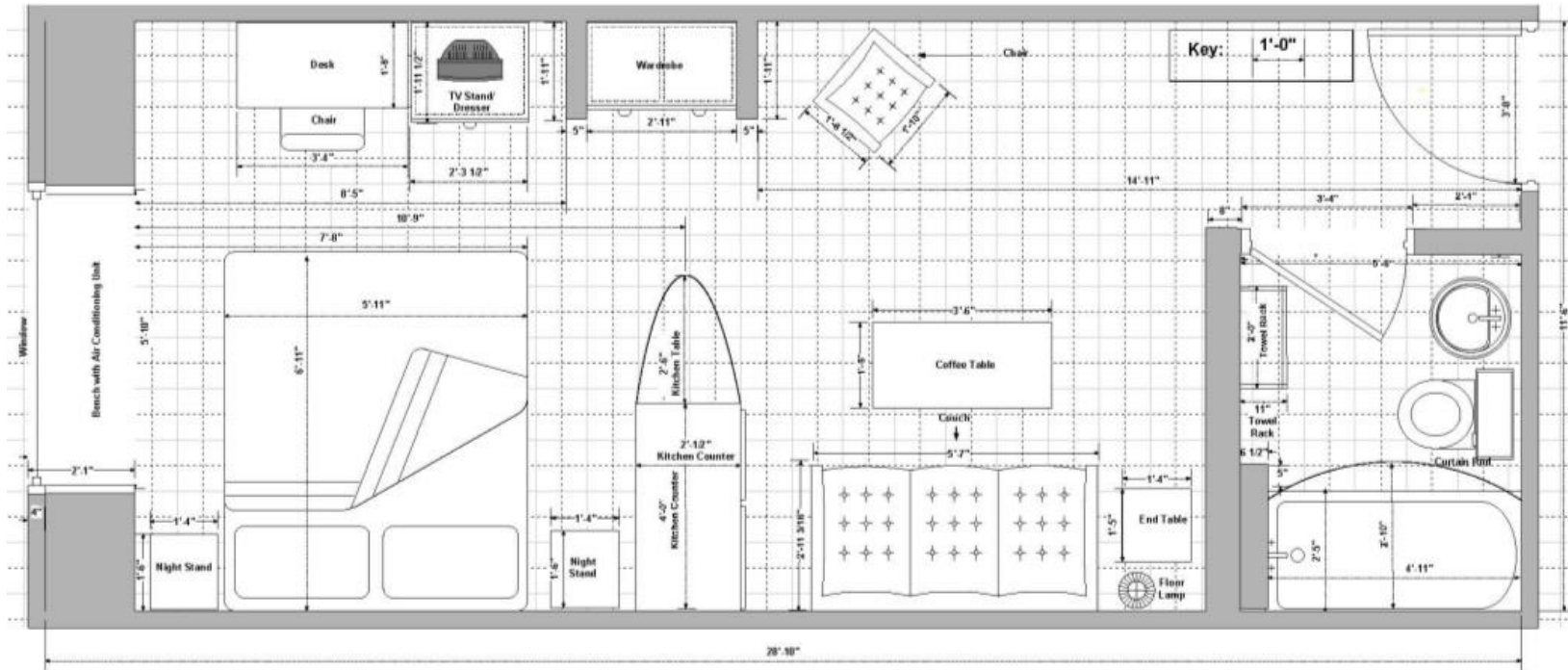
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Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene Resulting from Simulated Home Use of Moth Cakes

Appendix 1. Hotel Room Floor Plan



**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 2. Samples Excluded from Analysis

Room #	Date	AM/PM	Sample ID	Sample Location/Position	Comment
Equipment Malfunction					
5	8/28/2011	PM	MA05-0555	Closed Bedroom 5'	Pump ran, but lost reading of volume collected at time sample was collected.
8	11/2/2011	AM	MA01-0832	Open Bathroom Floor	Air sample record indicates pump ran for 0 minutes and collected 0 liters of air .
8	11/5/2011	AM	MA04-0823	Open Bedroom Floor	Air volume sampled: 0.17 L . Pump did not get set off.
10	11/3/2011	AM	MA02-1004	Open Bedroom 5'	Pump count indicates it collected only 0.023 L .
11	11/8/2011	AM	MA07-1143	Closed Bathroom Floor	Sample pump only collected 2.05 L .
11	11/5/2011	PM	MA04-1168	Closed Bedroom Floor	Pump stopped working during the sampling period, drawing only 0.19 L .
Broken Samples					
7	8/30/2011	PM	MA07-0759	Control Bedroom 5'	Sample broken.
9	11/2/2011	PM	MA01-0962	Open Bedroom Floor	Broken tube - most of sample lost.
Charcoal Tube/Sample Placement Errors					
1	8/24/2011	PM	MA01-0177	Open Bathroom Floor	Charcoal tube was reversed - probable sampling error.
4	8/24/2011	PM	MA01-0476	Closed Bathroom Floor	Possible sample location switch between bathroom floor & bedroom floor.
			MA01-0462	Closed Bedroom Floor	
4	8/26/2011	AM	MA03-0435	Closed Bathroom Floor	Possible sample location switch between bathroom floor & bedroom floor.
			MA03-0420	Closed Bedroom Floor	
5	8/26/2011	PM	MA03-0581	Closed Bathroom Floor	Possible sample location switch between bathroom floor & bedroom 5'.
			MA03-0551	Closed Bedroom 5'	
10	11/8/2011	PM	MA07-1088	Open Bathroom Floor	Possible sample location switch of bathroom floor samples between Room 10 and Room 11.
			MA07-1089	Open Bathroom Floor	
11	11/8/2011	PM	MA07-1188	Closed Bathroom Floor	Possible sample location switch of bathroom floor samples between Room 10 and Room 11.
			MA07-1189	Closed Bathroom Floor	
12	11/5/2011	PM	MA04-1268	Closed Bedroom Floor	Possible sample location switch between bathroom floor & bedroom floor.
			MA04-1282	Closed Bathroom Floor	
12	11/7/2011	PM	MA06-1271	Closed Bedroom Floor	Possible sample location switch between bathroom floor & bedroom floor.
			MA06-1287	Closed Bathroom Floor	
13	11/4/2011	PM	MA03-1366	Closed Bedroom Floor	Possible sample location switch between bathroom floor & bedroom floor.
			MA03-1380	Closed Bathroom Floor	
13	11/5/2011	AM	MA04-1323	Closed Bedroom Floor	Possible sample location switch between bathroom floor & bedroom floor.
			MA04-1338	Closed Bathroom Floor	

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 3. Air Sample Data for the Untreated Control Room – Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/Sample)	Results (µg <i>p</i> -DCB/Liter)	Results (Parts Per Million <i>p</i> -DCB)
7	Bathroom	Floor	MA01-0731	8/24/2011	AM	51	7.62	ND ^b	0.0131	0.00218
	Bathroom	Floor	MA01-0732	8/24/2011	AM	51	10.3	ND	0.00976	0.00162
	Bathroom	Floor	MA01-0776	8/24/2011	PM	50	7.60	ND	0.0132	0.00219
	Bathroom	Floor	MA01-0777	8/24/2011	PM	50	10.0	ND	0.0100	0.00166
	Bathroom	Floor	MA02-0733	8/25/2011	AM	50	7.63	ND	0.0131	0.00218
	Bathroom	Floor	MA02-0734	8/25/2011	AM	50	10.0	ND	0.0100	0.00166
	Bathroom	Floor	MA02-0778	8/25/2011	PM	50	7.59	ND	0.0132	0.00219
	Bathroom	Floor	MA02-0779	8/25/2011	PM	50	10.1	ND	0.00994	0.00165
	Bathroom	Floor	MA03-0735	8/26/2011	AM	50	7.55	ND	0.0132	0.00220
	Bathroom	Floor	MA03-0736	8/26/2011	AM	50	10.0	0.23 ^c	0.0230	0.00382
	Bathroom	Floor	MA03-0780	8/26/2011	PM	50	7.58	ND	0.0132	0.00219
	Bathroom	Floor	MA03-0781	8/26/2011	PM	50	10.0	ND	0.0100	0.00166
	Bathroom	Floor	MA04-0737	8/27/2011	AM	50	7.61	0.24 ^c	0.0315	0.00525
	Bathroom	Floor	MA04-0738	8/27/2011	AM	50	10.1	0.27 ^c	0.0268	0.00446
	Bathroom	Floor	MA04-0782	8/27/2011	PM	50	7.61	ND	0.0131	0.00219
	Bathroom	Floor	MA04-0783	8/27/2011	PM	50	10.1	ND	0.00992	0.00165
	Bathroom	Floor	MA05-0739	8/28/2011	AM	50	7.58	ND	0.0132	0.00219
	Bathroom	Floor	MA05-0740	8/28/2011	AM	50	10.1	ND	0.00991	0.00165
	Bathroom	Floor	MA05-0784	8/28/2011	PM	50	7.52	ND	0.0133	0.00221
	Bathroom	Floor	MA05-0785	8/28/2011	PM	50	10.1	ND	0.0100	0.00165
	Bathroom	Floor	MA06-0741	8/29/2011	AM	50	7.59	ND	0.0132	0.00219
	Bathroom	Floor	MA06-0742	8/29/2011	AM	50	10.1	0.23 ^c	0.0228	0.00379
	Bathroom	Floor	MA06-0786	8/29/2011	PM	50	7.55	ND	0.0132	0.00220
	Bathroom	Floor	MA06-0787	8/29/2011	PM	50	10.1	ND	0.00993	0.00165
	Bathroom	Floor	MA07-0743	8/30/2011	AM	50	7.47	ND	0.0134	0.00223
	Bathroom	Floor	MA07-0744	8/30/2011	AM	50	10.0	0.23 ^c	0.0230	0.00383
	Bathroom	Floor	MA07-0788	8/30/2011	PM	50	7.53	ND	0.0133	0.00221
	Bathroom	Floor	MA07-0789	8/30/2011	PM	50	10.0	0.22 ^c	0.0219	0.00365

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 3. Air Sample Data for the Untreated Control Room – Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
7	Bedroom	5 Feet	MA01-0701	8/24/2011	AM	51	7.49	ND	0.0134	0.00222
	Bedroom	5 Feet	MA01-0702	8/24/2011	AM	51	7.92	ND	0.0126	0.00210
	Bedroom	5 Feet	MA01-0746	8/24/2011	PM	50	7.64	ND	0.0131	0.00218
	Bedroom	5 Feet	MA01-0747	8/24/2011	PM	50	8.46	ND	0.0118	0.00197
	Bedroom	5 Feet	MA02-0703	8/25/2011	AM	50	7.55	ND	0.0132	0.00220
	Bedroom	5 Feet	MA02-0704	8/25/2011	AM	50	8.41	ND	0.0119	0.00198
	Bedroom	5 Feet	MA02-0748	8/25/2011	PM	50	7.53	ND	0.0133	0.00221
	Bedroom	5 Feet	MA02-0749	8/25/2011	PM	50	8.41	0.21 ^c	0.0250	0.00415
	Bedroom	5 Feet	MA03-0705	8/26/2011	AM	50	7.50	ND	0.0133	0.00222
	Bedroom	5 Feet	MA03-0706	8/26/2011	AM	50	8.50	0.21 ^c	0.0247	0.00411
	Bedroom	5 Feet	MA03-0750	8/26/2011	PM	50	7.48	ND	0.0134	0.00222
	Bedroom	5 Feet	MA03-0751	8/26/2011	PM	50	8.56	ND	0.0117	0.00194
	Bedroom	5 Feet	MA04-0707	8/27/2011	AM	50	7.39	0.22 ^c	0.0298	0.00495
	Bedroom	5 Feet	MA04-0708	8/27/2011	AM	50	8.48	0.24 ^c	0.0283	0.00471
	Bedroom	5 Feet	MA04-0752	8/27/2011	PM	50	7.05	ND	0.0142	0.00236
	Bedroom	5 Feet	MA04-0753	8/27/2011	PM	50	8.51	ND	0.0118	0.00195
	Bedroom	5 Feet	MA05-0709	8/28/2011	AM	50	7.60	ND	0.0132	0.00219
	Bedroom	5 Feet	MA05-0710	8/28/2011	AM	50	8.48	ND	0.0118	0.00196
	Bedroom	5 Feet	MA05-0754	8/28/2011	PM	50	7.38	ND	0.0136	0.00225
	Bedroom	5 Feet	MA05-0755	8/28/2011	PM	50	8.49	ND	0.0118	0.00196
	Bedroom	5 Feet	MA06-0711	8/29/2011	AM	50	7.54	ND	0.0133	0.00221
	Bedroom	5 Feet	MA06-0712	8/29/2011	AM	50	8.57	0.20 ^c	0.0233	0.00388
	Bedroom	5 Feet	MA06-0756	8/29/2011	PM	50	7.50	ND	0.0133	0.00222
	Bedroom	5 Feet	MA06-0757	8/29/2011	PM	50	8.48	ND	0.0118	0.00196
	Bedroom	5 Feet	MA07-0713	8/30/2011	AM	50	7.40	0.20 ^c	0.0270	0.00450
	Bedroom	5 Feet	MA07-0714	8/30/2011	AM	50	8.44	0.20 ^c	0.0237	0.00394
	Bedroom	5 Feet	MA07-0758	8/30/2011	PM	50	7.40	0.20 ^c	0.0270	0.00450
	Bedroom	5 Feet	MA07-0759	8/30/2011	PM	50	8.42	-	-	-

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 3. Air Sample Data for the Untreated Control Room – Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
7	Bedroom	Floor	MA01-0007	8/23/2011	PM	60	12.2	ND	0.00822	0.00137
	Bedroom	Floor	MA01-0716	8/24/2011	AM	51	8.22	ND	0.0122	0.00202
	Bedroom	Floor	MA01-0717	8/24/2011	AM	51	8.03	ND	0.0125	0.00207
	Bedroom	Floor	MA01-0761	8/24/2011	PM	50	8.41	ND	0.0119	0.00198
	Bedroom	Floor	MA01-0762	8/24/2011	PM	50	8.50	ND	0.0118	0.00196
	Bedroom	Floor	MA02-0718	8/25/2011	AM	50	8.29	ND	0.0121	0.00201
	Bedroom	Floor	MA02-0719	8/25/2011	AM	50	8.34	ND	0.0120	0.00199
	Bedroom	Floor	MA02-0763	8/25/2011	PM	50	8.27	0.21 ^c	0.0254	0.00422
	Bedroom	Floor	MA02-0764	8/25/2011	PM	50	8.32	0.20 ^c	0.0240	0.00400
	Bedroom	Floor	MA03-0720	8/26/2011	AM	50	8.27	0.20 ^c	0.0242	0.00402
	Bedroom	Floor	MA03-0721	8/26/2011	AM	50	8.28	0.20 ^c	0.0242	0.00402
	Bedroom	Floor	MA03-0765	8/26/2011	PM	50	0.29	ND	0.345	0.0574
	Bedroom	Floor	MA03-0766	8/26/2011	PM	50	8.32	ND	0.0120	0.00200
	Bedroom	Floor	MA04-0722	8/27/2011	AM	50	8.57	0.22 ^c	0.0257	0.00427
	Bedroom	Floor	MA04-0723	8/27/2011	AM	50	8.30	0.22 ^c	0.0265	0.00441
	Bedroom	Floor	MA04-0767	8/27/2011	PM	50	8.46	ND	0.0118	0.00197
	Bedroom	Floor	MA04-0768	8/27/2011	PM	50	8.30	ND	0.0120	0.00200
	Bedroom	Floor	MA05-0724	8/28/2011	AM	50	8.39	ND	0.0119	0.00198
	Bedroom	Floor	MA05-0725	8/28/2011	AM	50	8.26	ND	0.0121	0.00201
	Bedroom	Floor	MA05-0769	8/28/2011	PM	50	8.35	ND	0.0120	0.00199
	Bedroom	Floor	MA05-0770	8/28/2011	PM	50	8.21	ND	0.0122	0.00203
	Bedroom	Floor	MA06-0726	8/29/2011	AM	50	8.37	ND	0.0119	0.00199
	Bedroom	Floor	MA06-0727	8/29/2011	AM	50	8.26	ND	0.0121	0.00201
	Bedroom	Floor	MA06-0771	8/29/2011	PM	50	8.33	ND	0.0120	0.00200
	Bedroom	Floor	MA06-0772	8/29/2011	PM	50	8.15	ND	0.0123	0.00204
	Bedroom	Floor	MA07-0728	8/30/2011	AM	50	8.24	ND	0.0121	0.00202
	Bedroom	Floor	MA07-0729	8/30/2011	AM	50	8.15	ND	0.0123	0.00204
	Bedroom	Floor	MA07-0773	8/30/2011	PM	50	8.31	ND	0.0120	0.00200
	Bedroom	Floor	MA07-0774	8/30/2011	PM	50	8.15	ND	0.0123	0.00204

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 4. Air Sample Data for the Untreated Control Room – Fall Monitoring Period

	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
14	Bathroom	Floor	MA01-1431	11/2/2011	AM	50	10.4	0.80	0.0767	0.0128
	Bathroom	Floor	MA01-1432	11/2/2011	AM	50	9.08	0.53 ^c	0.0584	0.00971
	Bathroom	Floor	MA01-1476	11/2/2011	PM	50	10.4	0.71	0.0684	0.0114
	Bathroom	Floor	MA01-1477	11/2/2011	PM	50	9.33	0.54 ^c	0.0579	0.00963
	Bathroom	Floor	MA02-1433	11/3/2011	AM	50	10.3	0.88	0.0852	0.0142
	Bathroom	Floor	MA02-1434	11/3/2011	AM	50	9.31	0.76	0.0816	0.0136
	Bathroom	Floor	MA02-1478	11/3/2011	PM	50	10.3	0.79	0.0766	0.0127
	Bathroom	Floor	MA02-1479	11/3/2011	PM	50	9.40	0.61 ^c	0.0649	0.0108
	Bathroom	Floor	MA03-1435	11/4/2011	AM	50	10.3	0.84	0.0812	0.0135
	Bathroom	Floor	MA03-1436	11/4/2011	AM	50	9.48	0.71	0.0749	0.0125
	Bathroom	Floor	MA03-1480	11/4/2011	PM	50	10.3	0.73	0.0707	0.0118
	Bathroom	Floor	MA03-1481	11/4/2011	PM	50	9.65	0.60 ^c	0.0622	0.0103
	Bathroom	Floor	MA04-1437	11/5/2011	AM	50	10.4	0.98	0.0947	0.0157
	Bathroom	Floor	MA04-1438	11/5/2011	AM	50	9.66	0.94	0.0973	0.0162
	Bathroom	Floor	MA04-1482	11/5/2011	PM	50	10.4	1.15	0.111	0.0185
	Bathroom	Floor	MA04-1483	11/5/2011	PM	50	9.69	0.99	0.102	0.0170
	Bathroom	Floor	MA05-1439	11/6/2011	AM	50	10.4	1.16	0.112	0.0186
	Bathroom	Floor	MA05-1440	11/6/2011	AM	50	9.70	1.05	0.108	0.0180
	Bathroom	Floor	MA05-1484	11/6/2011	PM	50	10.4	1.17	0.113	0.0188
	Bathroom	Floor	MA05-1485	11/6/2011	PM	50	9.62	1.01	0.105	0.0175
	Bathroom	Floor	MA06-1441	11/7/2011	AM	50	10.3	1.30	0.126	0.0209
	Bathroom	Floor	MA06-1442	11/7/2011	AM	50	9.62	1.11	0.115	0.0192
	Bathroom	Floor	MA06-1486	11/7/2011	PM	56	11.7	1.12	0.0955	0.0159
	Bathroom	Floor	MA06-1487	11/7/2011	PM	56	10.9	0.93	0.0851	0.0142
	Bathroom	Floor	MA07-1443	11/8/2011	AM	50	10.4	1.36	0.131	0.0218
	Bathroom	Floor	MA07-1444	11/8/2011	AM	50	9.66	1.23	0.127	0.0212
	Bathroom	Floor	MA07-1488	11/8/2011	PM	50	10.4	1.03	0.0992	0.0165
	Bathroom	Floor	MA07-1489	11/8/2011	PM	50	9.64	0.90	0.0934	0.0155

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 4. Air Sample Data for the Untreated Control Room – Fall Monitoring Period

	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
14	Bedroom	5 Feet	MA01-0037	11/1/2011	AM	54	11.0	ND ^b	0.00911	0.00151
	Bedroom	5 Feet	MA01-1401	11/2/2011	AM	50	10.6	0.57 ^c	0.0538	0.00894
	Bedroom	5 Feet	MA01-1402	11/2/2011	AM	50	10.1	0.77	0.0765	0.0127
	Bedroom	5 Feet	MA01-1446	11/2/2011	PM	50	10.3	0.88	0.0854	0.0142
	Bedroom	5 Feet	MA01-1447	11/2/2011	PM	50	10.1	0.80	0.0796	0.0132
	Bedroom	5 Feet	MA02-1403	11/3/2011	AM	50	10.3	1.39	0.135	0.0224
	Bedroom	5 Feet	MA02-1404	11/3/2011	AM	50	10.0	1.17	0.117	0.0194
	Bedroom	5 Feet	MA02-1448	11/3/2011	PM	50	10.3	0.91	0.0881	0.0147
	Bedroom	5 Feet	MA02-1449	11/3/2011	PM	50	10.1	1.23	0.122	0.0203
	Bedroom	5 Feet	MA03-1405	11/4/2011	AM	50	10.4	0.89	0.0860	0.0143
	Bedroom	5 Feet	MA03-1406	11/4/2011	AM	50	10.1	0.86	0.0852	0.0142
	Bedroom	5 Feet	MA03-1450	11/4/2011	PM	50	10.4	0.96	0.0928	0.0154
	Bedroom	5 Feet	MA03-1451	11/4/2011	PM	50	10.0	1.12	0.112	0.0186
	Bedroom	5 Feet	MA04-1407	11/5/2011	AM	50	10.3	1.63	0.158	0.0263
	Bedroom	5 Feet	MA04-1408	11/5/2011	AM	50	10.1	1.26	0.125	0.0208
	Bedroom	5 Feet	MA04-1452	11/5/2011	PM	50	10.4	1.62	0.157	0.0260
	Bedroom	5 Feet	MA04-1453	11/5/2011	PM	50	9.97	1.57	0.157	0.0262
	Bedroom	5 Feet	MA05-1409	11/6/2011	AM	50	10.4	1.53	0.147	0.0245
	Bedroom	5 Feet	MA05-1410	11/6/2011	AM	50	9.89	1.59	0.161	0.0267
	Bedroom	5 Feet	MA05-1454	11/6/2011	PM	50	10.4	1.79	0.173	0.0287
	Bedroom	5 Feet	MA05-1455	11/6/2011	PM	50	9.92	1.67	0.168	0.0280
	Bedroom	5 Feet	MA06-1411	11/7/2011	AM	50	10.4	1.33	0.128	0.0213
	Bedroom	5 Feet	MA06-1412	11/7/2011	AM	50	9.90	1.35	0.136	0.0227
	Bedroom	5 Feet	MA06-1456	11/7/2011	PM	56	11.8	1.75	0.148	0.0246
	Bedroom	5 Feet	MA06-1457	11/7/2011	PM	56	11.2	1.51	0.135	0.0224
	Bedroom	5 Feet	MA07-1413	11/8/2011	AM	50	10.5	1.49	0.143	0.0237
	Bedroom	5 Feet	MA07-1414	11/8/2011	AM	50	9.92	1.50	0.151	0.0251
	Bedroom	5 Feet	MA07-1458	11/8/2011	PM	50	10.5	1.30	0.124	0.0206
	Bedroom	5 Feet	MA07-1459	11/8/2011	PM	50	9.90	1.93	0.195	0.0324

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 4. Air Sample Data for the Untreated Control Room – Fall Monitoring Period

	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
14	Bedroom	Floor	MA01-1416	11/2/2011	AM	50	9.62	0.63 ^c	0.0655	0.0109
	Bedroom	Floor	MA01-1417	11/2/2011	AM	50	10.1	0.68 ^c	0.0672	0.0112
	Bedroom	Floor	MA01-1461	11/2/2011	PM	50	9.84	0.63 ^c	0.0640	0.0106
	Bedroom	Floor	MA01-1462	11/2/2011	PM	50	10.0	0.65 ^c	0.0649	0.0108
	Bedroom	Floor	MA02-1418	11/3/2011	AM	50	9.78	0.94	0.0961	0.0160
	Bedroom	Floor	MA02-1419	11/3/2011	AM	50	10.1	1.09	0.108	0.0180
	Bedroom	Floor	MA02-1463	11/3/2011	PM	50	9.90	0.75	0.0758	0.0126
	Bedroom	Floor	MA02-1464	11/3/2011	PM	50	10.1	0.83	0.0824	0.0137
	Bedroom	Floor	MA03-1420	11/4/2011	AM	50	9.87	0.84	0.0851	0.0142
	Bedroom	Floor	MA03-1421	11/4/2011	AM	50	10.1	0.88	0.0870	0.0145
	Bedroom	Floor	MA03-1465	11/4/2011	PM	50	9.93	0.67 ^c	0.0675	0.0112
	Bedroom	Floor	MA03-1466	11/4/2011	PM	50	10.2	0.76	0.0747	0.0124
	Bedroom	Floor	MA04-1422	11/5/2011	AM	50	9.85	1.02	0.104	0.0172
	Bedroom	Floor	MA04-1423	11/5/2011	AM	50	10.1	0.99	0.0976	0.0162
	Bedroom	Floor	MA04-1467	11/5/2011	PM	50	9.85	1.26	0.128	0.0213
	Bedroom	Floor	MA04-1468	11/5/2011	PM	50	10.2	1.24	0.122	0.0203
	Bedroom	Floor	MA05-1424	11/6/2011	AM	50	9.87	1.20	0.122	0.0202
	Bedroom	Floor	MA05-1425	11/6/2011	AM	50	10.2	1.22	0.120	0.0199
	Bedroom	Floor	MA05-1469	11/6/2011	PM	50	9.82	1.23	0.125	0.0208
	Bedroom	Floor	MA05-1470	11/6/2011	PM	50	10.1	1.19	0.117	0.0195
	Bedroom	Floor	MA06-1426	11/7/2011	AM	50	9.85	1.18	0.120	0.0199
	Bedroom	Floor	MA06-1427	11/7/2011	AM	50	10.1	1.26	0.125	0.0207
	Bedroom	Floor	MA06-1471	11/7/2011	PM	56	11.2	1.08	0.0967	0.0161
	Bedroom	Floor	MA06-1472	11/7/2011	PM	56	11.5	1.10	0.0960	0.0160
	Bedroom	Floor	MA07-1428	11/8/2011	AM	50	9.96	1.39	0.140	0.0232
	Bedroom	Floor	MA07-1429	11/8/2011	AM	50	10.1	1.42	0.141	0.0234
	Bedroom	Floor	MA07-1473	11/8/2011	PM	50	9.96	1.07	0.107	0.0179
	Bedroom	Floor	MA07-1474	11/8/2011	PM	50	10.1	1.09	0.108	0.0179

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 5. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
1	Bathroom	Floor	MA01-0131	8/24/2011	AM	50	8.27	334	40.4	6.72
	Bathroom	Floor	MA01-0132	8/24/2011	AM	50	8.18	333	40.7	6.77
	Bathroom	Floor	MA01-0176	8/24/2011	PM	50	8.56	339	39.6	6.59
	Bathroom	Floor	MA01-0177	8/24/2011	PM	50	9.22	72	7.81	1.30
	Bathroom	Floor	MA02-0133	8/25/2011	AM	50	10.3	533	51.6	8.58
	Bathroom	Floor	MA02-0134	8/25/2011	AM	50	9.54	509	53.4	8.87
	Bathroom	Floor	MA02-0178	8/25/2011	PM	50	8.91	424	47.6	7.91
	Bathroom	Floor	MA02-0179	8/25/2011	PM	50	9.34	496	53.1	8.83
	Bathroom	Floor	MA03-0135	8/26/2011	AM	50	9.85	495	50.3	8.36
	Bathroom	Floor	MA03-0136	8/26/2011	AM	50	10.3	559	54.2	9.02
	Bathroom	Floor	MA03-0180	8/26/2011	PM	50	9.04	442	48.9	8.13
	Bathroom	Floor	MA03-0181	8/26/2011	PM	50	10.6	518	48.8	8.11
	Bathroom	Floor	MA04-0137	8/27/2011	AM	50	10.7	610	56.8	9.46
	Bathroom	Floor	MA04-0138	8/27/2011	AM	50	10.1	583	57.9	9.63
	Bathroom	Floor	MA04-0182	8/27/2011	PM	50	10.2	564	55.1	9.17
	Bathroom	Floor	MA04-0183	8/27/2011	PM	50	9.84	541	55.0	9.14
	Bathroom	Floor	MA05-0139	8/28/2011	AM	50	9.84	534	54.3	9.03
	Bathroom	Floor	MA05-0140	8/28/2011	AM	50	9.35	512	54.8	9.11
	Bathroom	Floor	MA05-0184	8/28/2011	PM	50	9.07	507	55.9	9.30
	Bathroom	Floor	MA05-0185	8/28/2011	PM	50	9.99	571	57.2	9.51
	Bathroom	Floor	MA06-0141	8/29/2011	AM	50	10.6	575	54.0	8.99
	Bathroom	Floor	MA06-0142	8/29/2011	AM	50	10.3	597	57.8	9.61
	Bathroom	Floor	MA06-0186	8/29/2011	PM	50	11.1	677	61.1	10.2
	Bathroom	Floor	MA06-0187	8/29/2011	PM	50	10.4	580	56.0	9.32
	Bathroom	Floor	MA07-0143	8/30/2011	AM	50	10.8	628	57.9	9.64
	Bathroom	Floor	MA07-0144	8/30/2011	AM	50	9.84	537	54.6	9.08
	Bathroom	Floor	MA07-0188	8/30/2011	PM	50	9.00	498	55.3	9.20
	Bathroom	Floor	MA07-0189	8/30/2011	PM	50	10.9	626	57.4	9.54

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 5. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
1	Bedroom	5 Feet	MA01-0101	8/24/2011	AM	50	8.20	373	45.5	7.57
	Bedroom	5 Feet	MA01-0102	8/24/2011	AM	50	7.61	328	43.1	7.17
	Bedroom	5 Feet	MA01-0146	8/24/2011	PM	50	8.95	441	49.3	8.19
	Bedroom	5 Feet	MA01-0147	8/24/2011	PM	50	9.15	421	46.0	7.65
	Bedroom	5 Feet	MA02-0103	8/25/2011	AM	50	10.3	694	67.2	11.2
	Bedroom	5 Feet	MA02-0104	8/25/2011	AM	50	9.17	622	67.8	11.3
	Bedroom	5 Feet	MA02-0148	8/25/2011	PM	50	9.98	607	60.8	10.1
	Bedroom	5 Feet	MA02-0149	8/25/2011	PM	50	10.3	597	57.7	9.60
	Bedroom	5 Feet	MA03-0105	8/26/2011	AM	50	11.1	619	56.0	9.31
	Bedroom	5 Feet	MA03-0106	8/26/2011	AM	50	10.7	609	57.1	9.50
	Bedroom	5 Feet	MA03-0150	8/26/2011	PM	50	10.9	739	68.1	11.3
	Bedroom	5 Feet	MA03-0151	8/26/2011	PM	50	10.1	696	69.1	11.5
	Bedroom	5 Feet	MA04-0107	8/27/2011	AM	50	9.78	746	76.3	12.7
	Bedroom	5 Feet	MA04-0108	8/27/2011	AM	50	10.5	825	78.9	13.1
	Bedroom	5 Feet	MA04-0152	8/27/2011	PM	50	9.18	670	73.0	12.1
	Bedroom	5 Feet	MA04-0153	8/27/2011	PM	50	10.4	784	75.5	12.5
	Bedroom	5 Feet	MA05-0109	8/28/2011	AM	50	10.2	822	80.4	13.4
	Bedroom	5 Feet	MA05-0110	8/28/2011	AM	50	11.0	869	79.3	13.2
	Bedroom	5 Feet	MA05-0154	8/28/2011	PM	50	10.2	795	77.6	12.9
	Bedroom	5 Feet	MA05-0155	8/28/2011	PM	50	9.44	831	88.0	14.6
	Bedroom	5 Feet	MA06-0111	8/29/2011	AM	50	9.92	720	72.6	12.1
	Bedroom	5 Feet	MA06-0112	8/29/2011	AM	50	9.01	622	69.0	11.5
	Bedroom	5 Feet	MA06-0156	8/29/2011	PM	50	8.98	559	62.2	10.4
	Bedroom	5 Feet	MA06-0157	8/29/2011	PM	50	10.5	628	59.6	9.92
	Bedroom	5 Feet	MA07-0113	8/30/2011	AM	50	9.29	538	57.9	9.63
	Bedroom	5 Feet	MA07-0114	8/30/2011	AM	50	10.4	622	59.5	9.90
	Bedroom	5 Feet	MA07-0158	8/30/2011	PM	50	10.5	615	58.5	9.73
	Bedroom	5 Feet	MA07-0159	8/30/2011	PM	50	9.81	566	57.7	9.60

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 5. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
1	Bedroom	Floor	MA01-0001	8/23/2011	PM	61	12.4	0.27 ^c	0.0218	0.00
	Bedroom	Floor	MA01-0116	8/24/2011	AM	50	7.73	303	39.2	6.52
	Bedroom	Floor	MA01-0117	8/24/2011	AM	50	7.36	347	47.1	7.84
	Bedroom	Floor	MA01-0161	8/24/2011	PM	50	8.77	388	44.2	7.36
	Bedroom	Floor	MA01-0162	8/24/2011	PM	50	9.21	383	41.6	6.92
	Bedroom	Floor	MA02-0118	8/25/2011	AM	50	9.79	498	50.9	8.46
	Bedroom	Floor	MA02-0119	8/25/2011	AM	50	8.92	492	55.2	9.17
	Bedroom	Floor	MA02-0163	8/25/2011	PM	50	10.9	574	52.8	8.78
	Bedroom	Floor	MA02-0164	8/25/2011	PM	50	9.80	479	48.9	8.13
	Bedroom	Floor	MA03-0120	8/26/2011	AM	50	11.6	708	60.8	10.1
	Bedroom	Floor	MA03-0121	8/26/2011	AM	50	9.58	530	55.3	9.20
	Bedroom	Floor	MA03-0165	8/26/2011	PM	50	9.87	528	53.5	8.90
	Bedroom	Floor	MA03-0166	8/26/2011	PM	50	9.32	472	50.6	8.42
	Bedroom	Floor	MA04-0122	8/27/2011	AM	50	9.02	538	59.6	9.92
	Bedroom	Floor	MA04-0123	8/27/2011	AM	50	9.40	536	57.0	9.48
	Bedroom	Floor	MA04-0167	8/27/2011	PM	50	10.9	662	60.9	10.1
	Bedroom	Floor	MA04-0168	8/27/2011	PM	50	9.01	512	56.8	9.45
	Bedroom	Floor	MA05-0124	8/28/2011	AM	50	8.97	495	55.2	9.18
	Bedroom	Floor	MA05-0125	8/28/2011	AM	50	10.5	598	56.7	9.44
	Bedroom	Floor	MA05-0169	8/28/2011	PM	50	10.6	618	58.5	9.73
	Bedroom	Floor	MA05-0170	8/28/2011	PM	50	10.9	637	58.2	9.68
	Bedroom	Floor	MA06-0126	8/29/2011	AM	50	9.50	537	56.5	9.40
	Bedroom	Floor	MA06-0127	8/29/2011	AM	50	11.0	596	54.3	9.03
	Bedroom	Floor	MA06-0171	8/29/2011	PM	50	10.0	581	58.0	9.65
	Bedroom	Floor	MA06-0172	8/29/2011	PM	50	9.43	572	60.7	10.1
	Bedroom	Floor	MA07-0128	8/30/2011	AM	50	8.84	514	58.1	9.67
	Bedroom	Floor	MA07-0129	8/30/2011	AM	50	10.1	596	59.2	9.84
	Bedroom	Floor	MA07-0173	8/30/2011	PM	50	9.17	572	62.4	10.4
	Bedroom	Floor	MA07-0174	8/30/2011	PM	50	10.0	607	60.5	10.1

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 5. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
2	Bathroom	Floor	MA01-0231	8/24/2011	AM	50	10.0	554	55.3	9.20
	Bathroom	Floor	MA01-0232	8/24/2011	AM	50	10.0	579	57.8	9.62
	Bathroom	Floor	MA01-0276	8/24/2011	PM	48	9.74	547	56.2	9.34
	Bathroom	Floor	MA01-0277	8/24/2011	PM	48	9.75	537	55.1	9.16
	Bathroom	Floor	MA02-0233	8/25/2011	AM	50	10.1	768	76.0	12.6
	Bathroom	Floor	MA02-0234	8/25/2011	AM	50	10.1	785	77.7	12.9
	Bathroom	Floor	MA02-0278	8/25/2011	PM	51	10.3	715	69.8	11.6
	Bathroom	Floor	MA02-0279	8/25/2011	PM	51	10.2	711	69.4	11.5
	Bathroom	Floor	MA03-0235	8/26/2011	AM	52	10.5	702	66.6	11.1
	Bathroom	Floor	MA03-0236	8/26/2011	AM	52	10.5	707	67.1	11.2
	Bathroom	Floor	MA03-0280	8/26/2011	PM	51	10.2	733	71.7	11.9
	Bathroom	Floor	MA03-0281	8/26/2011	PM	51	10.2	711	69.7	11.6
	Bathroom	Floor	MA04-0237	8/27/2011	AM	50	10.1	844	83.8	13.9
	Bathroom	Floor	MA04-0238	8/27/2011	AM	50	10.1	811	80.5	13.4
	Bathroom	Floor	MA04-0282	8/27/2011	PM	49	9.94	724	72.8	12.1
	Bathroom	Floor	MA04-0283	8/27/2011	PM	49	9.94	664	66.8	11.1
	Bathroom	Floor	MA05-0239	8/28/2011	AM	49	9.99	819	82.0	13.6
	Bathroom	Floor	MA05-0240	8/28/2011	AM	49	9.97	836	83.9	13.9
	Bathroom	Floor	MA05-0284	8/28/2011	PM	50	10.2	874	85.8	14.3
	Bathroom	Floor	MA05-0285	8/28/2011	PM	51	10.2	848	83.1	13.8
	Bathroom	Floor	MA06-0241	8/29/2011	AM	51	10.4	1026	98.7	16.4
	Bathroom	Floor	MA06-0242	8/29/2011	AM	51	10.4	941	90.6	15.1
	Bathroom	Floor	MA06-0286	8/29/2011	PM	51	10.2	875	85.6	14.2
	Bathroom	Floor	MA06-0287	8/29/2011	PM	51	10.2	869	85.0	14.1
	Bathroom	Floor	MA07-0243	8/30/2011	AM	50	10.1	979	97.2	16.2
	Bathroom	Floor	MA07-0244	8/30/2011	AM	50	10.1	1000	99.2	16.5
	Bathroom	Floor	MA07-0288	8/30/2011	PM	50	10.1	919	91.4	15.2
	Bathroom	Floor	MA07-0289	8/30/2011	PM	50	10.1	864	85.8	14.3

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 5. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
2	Bedroom	5 Feet	MA01-0201	8/24/2011	AM	49	9.93	643	64.8	10.8
	Bedroom	5 Feet	MA01-0202	8/24/2011	AM	49	9.96	621	62.3	10.4
	Bedroom	5 Feet	MA01-0246	8/24/2011	PM	48	9.76	608	62.3	10.4
	Bedroom	5 Feet	MA01-0247	8/24/2011	PM	48	9.78	591	60.4	10.1
	Bedroom	5 Feet	MA02-0203	8/25/2011	AM	50	10.0	829	82.8	13.8
	Bedroom	5 Feet	MA02-0204	8/25/2011	AM	50	10.0	834	83.2	13.8
	Bedroom	5 Feet	MA02-0248	8/25/2011	PM	51	10.3	839	81.6	13.6
	Bedroom	5 Feet	MA02-0249	8/25/2011	PM	51	10.3	842	82.1	13.7
	Bedroom	5 Feet	MA03-0205	8/26/2011	AM	52	10.6	805	76.2	12.7
	Bedroom	5 Feet	MA03-0206	8/26/2011	AM	52	10.5	824	78.3	13.0
	Bedroom	5 Feet	MA03-0250	8/26/2011	PM	50	10.1	749	74.3	12.4
	Bedroom	5 Feet	MA03-0251	8/26/2011	PM	50	10.1	736	73.1	12.2
	Bedroom	5 Feet	MA04-0207	8/27/2011	AM	50	10.1	953	94.8	15.8
	Bedroom	5 Feet	MA04-0208	8/27/2011	AM	50	10.1	920	91.5	15.2
	Bedroom	5 Feet	MA04-0252	8/27/2011	PM	49	9.83	773	78.7	13.1
	Bedroom	5 Feet	MA04-0253	8/27/2011	PM	49	9.81	766	78.1	13.0
	Bedroom	5 Feet	MA05-0209	8/28/2011	AM	50	10.0	945	94.4	15.7
	Bedroom	5 Feet	MA05-0210	8/28/2011	AM	50	10.0	948	94.5	15.7
	Bedroom	5 Feet	MA05-0254	8/28/2011	PM	50	10.1	943	92.9	15.5
	Bedroom	5 Feet	MA05-0255	8/28/2011	PM	50	10.1	971	95.8	15.9
	Bedroom	5 Feet	MA06-0211	8/29/2011	AM	51	10.4	1089	105	17.4
	Bedroom	5 Feet	MA06-0212	8/29/2011	AM	51	10.4	1024	98.5	16.4
	Bedroom	5 Feet	MA06-0256	8/29/2011	PM	51	10.3	910	88.5	14.7
	Bedroom	5 Feet	MA06-0257	8/29/2011	PM	51	10.2	955	93.4	15.5
	Bedroom	5 Feet	MA07-0213	8/30/2011	AM	50	10.0	1040	104	17.2
	Bedroom	5 Feet	MA07-0214	8/30/2011	AM	50	10.0	1018	101	16.9
	Bedroom	5 Feet	MA07-0258	8/30/2011	PM	50	10.0	929	92.7	15.4
	Bedroom	5 Feet	MA07-0259	8/30/2011	PM	50	10.0	889	88.8	14.8

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 5. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
2	Bedroom	Floor	MA01-0002	8/23/2011	PM	63	12.7	ND ^b	0.00785	0.00131
	Bedroom	Floor	MA01-0216	8/24/2011	AM	49	9.98	561	56.2	9.35
	Bedroom	Floor	MA01-0217	8/24/2011	AM	49	9.96	552	55.4	9.22
	Bedroom	Floor	MA01-0261	8/24/2011	PM	48	9.75	564	57.8	9.62
	Bedroom	Floor	MA01-0262	8/24/2011	PM	48	9.75	551	56.5	9.40
	Bedroom	Floor	MA02-0218	8/25/2011	AM	50	10.2	746	73.4	12.2
	Bedroom	Floor	MA02-0219	8/25/2011	AM	50	10.2	719	70.8	11.8
	Bedroom	Floor	MA02-0263	8/25/2011	PM	50	10.1	763	75.5	12.6
	Bedroom	Floor	MA02-0264	8/25/2011	PM	50	10.1	742	73.5	12.2
	Bedroom	Floor	MA03-0220	8/26/2011	AM	53	10.6	745	70.0	11.6
	Bedroom	Floor	MA03-0221	8/26/2011	AM	53	10.6	797	75.1	12.5
	Bedroom	Floor	MA03-0265	8/26/2011	PM	51	10.2	668	65.3	10.9
	Bedroom	Floor	MA03-0266	8/26/2011	PM	51	10.2	710	69.3	11.5
	Bedroom	Floor	MA04-0222	8/27/2011	AM	50	10.1	911	89.8	14.9
	Bedroom	Floor	MA04-0223	8/27/2011	AM	50	10.1	831	81.9	13.6
	Bedroom	Floor	MA04-0267	8/27/2011	PM	49	9.92	790	79.6	13.2
	Bedroom	Floor	MA04-0268	8/27/2011	PM	49	9.95	711	71.5	11.9
	Bedroom	Floor	MA05-0224	8/28/2011	AM	49	9.97	856	85.9	14.3
	Bedroom	Floor	MA05-0225	8/28/2011	AM	49	9.96	807	81.0	13.5
	Bedroom	Floor	MA05-0269	8/28/2011	PM	51	10.3	857	83.5	13.9
	Bedroom	Floor	MA05-0270	8/28/2011	PM	51	10.3	849	82.7	13.8
	Bedroom	Floor	MA06-0226	8/29/2011	AM	51	10.3	932	90.7	15.1
	Bedroom	Floor	MA06-0227	8/29/2011	AM	51	10.3	876	85.1	14.2
	Bedroom	Floor	MA06-0271	8/29/2011	PM	50	10.1	947	93.6	15.6
	Bedroom	Floor	MA06-0272	8/29/2011	PM	50	10.1	893	88.2	14.7
	Bedroom	Floor	MA07-0228	8/30/2011	AM	50	10.1	1002	99.4	16.5
	Bedroom	Floor	MA07-0229	8/30/2011	AM	50	10.1	1002	99.2	16.5
	Bedroom	Floor	MA07-0273	8/30/2011	PM	50	10.0	878	87.6	14.6
	Bedroom	Floor	MA07-0274	8/30/2011	PM	50	10.0	911	90.7	15.1

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 5. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
3	Bathroom	Floor	MA01-0331	8/24/2011	AM	50	10.0	506	50.4	8.38
	Bathroom	Floor	MA01-0332	8/24/2011	AM	50	10.1	469	46.6	7.75
	Bathroom	Floor	MA01-0376	8/24/2011	PM	49	9.91	450	45.4	7.55
	Bathroom	Floor	MA01-0377	8/24/2011	PM	49	9.90	471	47.6	7.91
	Bathroom	Floor	MA02-0333	8/25/2011	AM	50	10.2	621	61.0	10.1
	Bathroom	Floor	MA02-0334	8/25/2011	AM	50	10.2	608	59.8	9.94
	Bathroom	Floor	MA02-0378	8/25/2011	PM	50	10.0	673	67.2	11.2
	Bathroom	Floor	MA02-0379	8/25/2011	PM	50	10.0	754	75.2	12.5
	Bathroom	Floor	MA03-0335	8/26/2011	AM	51	10.4	625	60.3	10.0
	Bathroom	Floor	MA03-0336	8/26/2011	AM	51	10.4	637	61.5	10.2
	Bathroom	Floor	MA03-0380	8/26/2011	PM	50	10.2	609	59.8	9.95
	Bathroom	Floor	MA03-0381	8/26/2011	PM	50	10.2	614	60.3	10.0
	Bathroom	Floor	MA04-0337	8/27/2011	AM	50	10.1	718	71.4	11.9
	Bathroom	Floor	MA04-0338	8/27/2011	AM	50	10.1	744	74.0	12.3
	Bathroom	Floor	MA04-0382	8/27/2011	PM	49	9.94	614	61.8	10.3
	Bathroom	Floor	MA04-0383	8/27/2011	PM	49	9.97	602	60.4	10.0
	Bathroom	Floor	MA05-0339	8/28/2011	AM	51	10.3	724	70.3	11.7
	Bathroom	Floor	MA05-0340	8/28/2011	AM	50	10.2	761	74.7	12.4
	Bathroom	Floor	MA05-0384	8/28/2011	PM	51	10.3	726	70.8	11.8
	Bathroom	Floor	MA05-0385	8/28/2011	PM	51	10.3	712	69.3	11.5
	Bathroom	Floor	MA06-0341	8/29/2011	AM	52	10.4	780	74.9	12.4
	Bathroom	Floor	MA06-0342	8/29/2011	AM	52	10.5	779	74.5	12.4
	Bathroom	Floor	MA06-0386	8/29/2011	PM	51	10.3	675	65.6	10.9
	Bathroom	Floor	MA06-0387	8/29/2011	PM	51	10.3	685	66.5	11.1
	Bathroom	Floor	MA07-0343	8/30/2011	AM	50	10.0	854	85.2	14.2
	Bathroom	Floor	MA07-0344	8/30/2011	AM	50	10.0	863	86.1	14.3
	Bathroom	Floor	MA07-0388	8/30/2011	PM	50	10.1	699	69.3	11.5
	Bathroom	Floor	MA07-0389	8/30/2011	PM	50	10.1	698	69.2	11.5

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 5. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
3	Bedroom	5 Feet	MA01-0301	8/24/2011	AM	50	10.1	374	37.0	6.16
	Bedroom	5 Feet	MA01-0302	8/24/2011	AM	50	10.1	381	37.8	6.28
	Bedroom	5 Feet	MA01-0346	8/24/2011	PM	48	9.68	410	42.4	7.04
	Bedroom	5 Feet	MA01-0347	8/24/2011	PM	48	9.65	413	42.8	7.12
	Bedroom	5 Feet	MA02-0303	8/25/2011	AM	50	10.1	713	70.6	11.7
	Bedroom	5 Feet	MA02-0304	8/25/2011	AM	50	10.1	686	67.9	11.3
	Bedroom	5 Feet	MA02-0348	8/25/2011	PM	50	10.1	629	62.5	10.4
	Bedroom	5 Feet	MA02-0349	8/25/2011	PM	50	10.0	647	64.4	10.7
	Bedroom	5 Feet	MA03-0305	8/26/2011	AM	52	10.4	649	62.4	10.4
	Bedroom	5 Feet	MA03-0306	8/26/2011	AM	52	10.4	605	58.0	9.65
	Bedroom	5 Feet	MA03-0350	8/26/2011	PM	51	10.3	661	64.4	10.7
	Bedroom	5 Feet	MA03-0351	8/26/2011	PM	51	10.3	642	62.6	10.4
	Bedroom	5 Feet	MA04-0307	8/27/2011	AM	50	10.2	982	96.6	16.1
	Bedroom	5 Feet	MA04-0308	8/27/2011	AM	50	10.1	912	89.9	15.0
	Bedroom	5 Feet	MA04-0352	8/27/2011	PM	49	9.92	557	56.1	9.34
	Bedroom	5 Feet	MA04-0353	8/27/2011	PM	49	9.91	562	56.7	9.43
	Bedroom	5 Feet	MA05-0309	8/28/2011	AM	50	10.1	709	70.5	11.7
	Bedroom	5 Feet	MA05-0310	8/28/2011	AM	13	2.64	189	71.6	11.9
	Bedroom	5 Feet	MA05-0354	8/28/2011	PM	51	10.3	651	63.4	10.5
	Bedroom	5 Feet	MA05-0355	8/28/2011	PM	51	10.3	671	65.3	10.9
	Bedroom	5 Feet	MA06-0311	8/29/2011	AM	52	10.4	761	72.8	12.1
	Bedroom	5 Feet	MA06-0312	8/29/2011	AM	52	10.4	756	72.3	12.0
	Bedroom	5 Feet	MA06-0356	8/29/2011	PM	51	10.2	640	62.7	10.4
	Bedroom	5 Feet	MA06-0357	8/29/2011	PM	51	10.2	641	62.7	10.4
	Bedroom	5 Feet	MA07-0313	8/30/2011	AM	50	10.0	904	90.3	15.0
	Bedroom	5 Feet	MA07-0314	8/30/2011	AM	50	10.0	898	89.8	14.9
	Bedroom	5 Feet	MA07-0358	8/30/2011	PM	50	10.0	702	70.1	11.7
	Bedroom	5 Feet	MA07-0359	8/30/2011	PM	50	10.0	658	65.7	10.9

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 5. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
3	Bedroom	Floor	MA01-0003	8/23/2011	PM	61	12.3	ND	0.00816	0.00136
	Bedroom	Floor	MA01-0316	8/24/2011	AM	50	10.1	394	39.2	6.51
	Bedroom	Floor	MA01-0317	8/24/2011	AM	50	10.1	391	38.8	6.46
	Bedroom	Floor	MA01-0361	8/24/2011	PM	48	9.66	381	39.5	6.56
	Bedroom	Floor	MA01-0362	8/24/2011	PM	48	9.69	390	40.2	6.69
	Bedroom	Floor	MA02-0318	8/25/2011	AM	51	10.2	677	66.2	11.0
	Bedroom	Floor	MA02-0319	8/25/2011	AM	51	10.2	695	68.0	11.3
	Bedroom	Floor	MA02-0363	8/25/2011	PM	50	10.0	580	57.9	9.63
	Bedroom	Floor	MA02-0364	8/25/2011	PM	50	10.0	642	63.9	10.6
	Bedroom	Floor	MA03-0320	8/26/2011	AM	51	10.4	634	61.2	10.2
	Bedroom	Floor	MA03-0321	8/26/2011	AM	51	10.4	638	61.5	10.2
	Bedroom	Floor	MA03-0365	8/26/2011	PM	50	10.2	632	62.0	10.3
	Bedroom	Floor	MA03-0366	8/26/2011	PM	51	10.2	597	58.5	9.73
	Bedroom	Floor	MA04-0322	8/27/2011	AM	50	10.1	700	69.6	11.6
	Bedroom	Floor	MA04-0323	8/27/2011	AM	50	10.1	694	69.1	11.5
	Bedroom	Floor	MA04-0367	8/27/2011	PM	50	10.0	645	64.4	10.7
	Bedroom	Floor	MA04-0368	8/27/2011	PM	50	10.1	602	59.7	9.92
	Bedroom	Floor	MA05-0324	8/28/2011	AM	50	10.1	720	71.2	11.8
	Bedroom	Floor	MA05-0325	8/28/2011	AM	50	10.2	707	69.4	11.5
	Bedroom	Floor	MA05-0369	8/28/2011	PM	50	10.2	640	62.8	10.4
	Bedroom	Floor	MA05-0370	8/28/2011	PM	50	10.2	671	65.8	11.0
	Bedroom	Floor	MA06-0326	8/29/2011	AM	52	10.4	741	70.9	11.8
	Bedroom	Floor	MA06-0327	8/29/2011	AM	52	10.4	779	74.7	12.4
	Bedroom	Floor	MA06-0371	8/29/2011	PM	51	10.3	679	66.1	11.0
	Bedroom	Floor	MA06-0372	8/29/2011	PM	51	10.3	713	69.3	11.5
	Bedroom	Floor	MA07-0328	8/30/2011	AM	50	10.0	812	81.2	13.5
	Bedroom	Floor	MA07-0329	8/30/2011	AM	50	10.0	833	83.1	13.8
	Bedroom	Floor	MA07-0373	8/30/2011	PM	50	10.0	708	70.6	11.7
	Bedroom	Floor	MA07-0374	8/30/2011	PM	50	10.0	708	70.7	11.8

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 6. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
8	Bathroom	Floor	MA01-0831	11/2/2011	AM	50	10.2	320	31.5	5.24
	Bathroom	Floor	MA01-0832	11/2/2011	AM	0	0.00	-	-	-
	Bathroom	Floor	MA01-0876	11/2/2011	PM	50	10.0	386	38.5	6.40
	Bathroom	Floor	MA01-0877	11/2/2011	PM	50	10.6	374	35.2	5.85
	Bathroom	Floor	MA02-0833	11/3/2011	AM	50	10.0	395	39.4	6.56
	Bathroom	Floor	MA02-0834	11/3/2011	AM	50	10.0	392	39.1	6.50
	Bathroom	Floor	MA02-0878	11/3/2011	PM	50	10.0	383	38.2	6.35
	Bathroom	Floor	MA02-0879	11/3/2011	PM	50	10.0	367	36.7	6.10
	Bathroom	Floor	MA03-0835	11/4/2011	AM	50	10.0	362	36.2	6.01
	Bathroom	Floor	MA03-0836	11/4/2011	AM	50	10.0	357	35.6	5.92
	Bathroom	Floor	MA03-0880	11/4/2011	PM	50	10.1	352	35.0	5.83
	Bathroom	Floor	MA03-0881	11/4/2011	PM	50	10.1	349	34.6	5.76
	Bathroom	Floor	MA04-0837	11/5/2011	AM	50	10.2	312	30.6	5.09
	Bathroom	Floor	MA04-0838	11/5/2011	AM	50	10.1	328	32.4	5.40
	Bathroom	Floor	MA04-0882	11/5/2011	PM	50	10.1	320	31.6	5.25
	Bathroom	Floor	MA04-0883	11/5/2011	PM	50	10.0	352	35.1	5.83
	Bathroom	Floor	MA05-0839	11/6/2011	AM	50	10.0	347	34.7	5.77
	Bathroom	Floor	MA05-0840	11/6/2011	AM	50	10.0	343	34.3	5.70
	Bathroom	Floor	MA05-0884	11/6/2011	PM	50	7.55	221	29.3	4.87
	Bathroom	Floor	MA05-0885	11/6/2011	PM	50	10.0	318	31.8	5.29
	Bathroom	Floor	MA06-0841	11/7/2011	AM	50	7.49	210	28.0	4.66
	Bathroom	Floor	MA06-0842	11/7/2011	AM	50	9.99	274	27.4	4.56
	Bathroom	Floor	MA06-0886	11/7/2011	PM	50	7.93	233	29.4	4.89
	Bathroom	Floor	MA06-0887	11/7/2011	PM	50	10.6	312	29.5	4.91
	Bathroom	Floor	MA07-0843	11/8/2011	AM	50	10.3	279	27.1	4.51
	Bathroom	Floor	MA07-0844	11/8/2011	AM	50	7.74	208	26.9	4.47
	Bathroom	Floor	MA07-0888	11/8/2011	PM	50	10.3	304	29.5	4.91
	Bathroom	Floor	MA07-0889	11/8/2011	PM	50	7.74	234	30.2	5.03

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 6. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
8	Bedroom	5 Feet	MA01-0031	11/1/2011	AM	53	10.8	0.53 ^c	0.0492	0.00818
	Bedroom	5 Feet	MA01-0801	11/2/2011	AM	51	10.4	315	30.4	5.06
	Bedroom	5 Feet	MA01-0802	11/2/2011	AM	51	10.2	368	35.9	5.98
	Bedroom	5 Feet	MA01-0846	11/2/2011	PM	50	10.0	479	47.7	7.93
	Bedroom	5 Feet	MA01-0847	11/2/2011	PM	50	10.0	459	45.9	7.63
	Bedroom	5 Feet	MA02-0803	11/3/2011	AM	50	10.0	377	37.6	6.26
	Bedroom	5 Feet	MA02-0804	11/3/2011	AM	50	10.6	361	34.2	5.69
	Bedroom	5 Feet	MA02-0848	11/3/2011	PM	50	10.0	407	40.6	6.75
	Bedroom	5 Feet	MA02-0849	11/3/2011	PM	50	10.1	383	37.9	6.30
	Bedroom	5 Feet	MA03-0805	11/4/2011	AM	50	10.0	371	37.0	6.16
	Bedroom	5 Feet	MA03-0806	11/4/2011	AM	50	10.0	372	37.1	6.17
	Bedroom	5 Feet	MA03-0850	11/4/2011	PM	50	10.0	350	35.0	5.82
	Bedroom	5 Feet	MA03-0851	11/4/2011	PM	51	10.3	335	32.6	5.42
	Bedroom	5 Feet	MA04-0807	11/5/2011	AM	50	10.0	336	33.6	5.58
	Bedroom	5 Feet	MA04-0808	11/5/2011	AM	50	10.0	322	32.1	5.33
	Bedroom	5 Feet	MA04-0852	11/5/2011	PM	50	10.0	352	35.2	5.85
	Bedroom	5 Feet	MA04-0853	11/5/2011	PM	50	10.0	353	35.3	5.87
	Bedroom	5 Feet	MA05-0809	11/6/2011	AM	50	10.0	341	34.0	5.65
	Bedroom	5 Feet	MA05-0810	11/6/2011	AM	50	9.99	302	30.2	5.03
	Bedroom	5 Feet	MA05-0854	11/6/2011	PM	50	10.1	336	33.4	5.56
	Bedroom	5 Feet	MA05-0855	11/6/2011	PM	50	10.1	346	34.4	5.73
	Bedroom	5 Feet	MA06-0811	11/7/2011	AM	50	10.0	312	31.1	5.18
	Bedroom	5 Feet	MA06-0812	11/7/2011	AM	50	10.1	319	31.7	5.28
	Bedroom	5 Feet	MA06-0856	11/7/2011	PM	51	10.3	441	43.0	7.15
	Bedroom	5 Feet	MA06-0857	11/7/2011	PM	51	10.3	437	42.5	7.06
	Bedroom	5 Feet	MA07-0813	11/8/2011	AM	51	10.4	371	35.8	5.95
	Bedroom	5 Feet	MA07-0814	11/8/2011	AM	52	10.4	388	37.2	6.19
	Bedroom	5 Feet	MA07-0858	11/8/2011	PM	51	10.3	521	50.5	8.40
	Bedroom	5 Feet	MA07-0859	11/8/2011	PM	51	10.3	449	43.6	7.26

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 6. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
8	Bedroom	Floor	MA01-0816	11/2/2011	AM	51	10.2	316	30.9	5.13
	Bedroom	Floor	MA01-0817	11/2/2011	AM	50	10.2	317	31.1	5.17
	Bedroom	Floor	MA01-0861	11/2/2011	PM	50	10.0	331	33.0	5.48
	Bedroom	Floor	MA01-0862	11/2/2011	PM	50	10.0	371	37.0	6.16
	Bedroom	Floor	MA02-0818	11/3/2011	AM	50	10.0	410	40.9	6.80
	Bedroom	Floor	MA02-0819	11/3/2011	AM	50	10.0	401	40.1	6.66
	Bedroom	Floor	MA02-0863	11/3/2011	PM	50	10.0	363	36.2	6.03
	Bedroom	Floor	MA02-0864	11/3/2011	PM	50	10.1	373	37.1	6.17
	Bedroom	Floor	MA03-0820	11/4/2011	AM	50	10.0	374	37.4	6.21
	Bedroom	Floor	MA03-0821	11/4/2011	AM	51	10.3	369	36.0	5.98
	Bedroom	Floor	MA03-0865	11/4/2011	PM	50	10.0	348	34.7	5.77
	Bedroom	Floor	MA03-0866	11/4/2011	PM	50	10.1	351	34.9	5.80
	Bedroom	Floor	MA04-0822	11/5/2011	AM	50	10.0	348	34.8	5.78
	Bedroom	Floor	MA04-0823	11/5/2011	AM	0	0.17	7.72	44.6	7.42
	Bedroom	Floor	MA04-0867	11/5/2011	PM	50	10.1	359	35.7	5.94
	Bedroom	Floor	MA04-0868	11/5/2011	PM	50	10.0	322	32.1	5.34
	Bedroom	Floor	MA05-0824	11/6/2011	AM	50	10.6	346	32.5	5.41
	Bedroom	Floor	MA05-0825	11/6/2011	AM	50	10.0	332	33.2	5.52
	Bedroom	Floor	MA05-0869	11/6/2011	PM	50	10.1	367	36.3	6.04
	Bedroom	Floor	MA05-0870	11/6/2011	PM	50	10.1	346	34.3	5.70
	Bedroom	Floor	MA06-0826	11/7/2011	AM	50	10.0	298	29.7	4.94
	Bedroom	Floor	MA06-0827	11/7/2011	AM	50	10.0	317	31.6	5.26
	Bedroom	Floor	MA06-0871	11/7/2011	PM	51	10.3	335	32.7	5.43
	Bedroom	Floor	MA06-0872	11/7/2011	PM	51	10.3	339	32.9	5.48
	Bedroom	Floor	MA07-0828	11/8/2011	AM	52	10.5	314	29.8	4.96
	Bedroom	Floor	MA07-0829	11/8/2011	AM	52	10.5	307	29.2	4.85
	Bedroom	Floor	MA07-0873	11/8/2011	PM	52	10.5	361	34.4	5.72
	Bedroom	Floor	MA07-0874	11/8/2011	PM	52	10.5	345	32.9	5.48

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 6. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
9	Bathroom	Floor	MA01-0931	11/2/2011	AM	51	10.3	233	22.5	3.75
	Bathroom	Floor	MA01-0932	11/2/2011	AM	51	10.3	352	34.1	5.68
	Bathroom	Floor	MA01-0976	11/2/2011	PM	50	10.1	472	46.9	7.80
	Bathroom	Floor	MA01-0977	11/2/2011	PM	50	10.1	488	48.5	8.07
	Bathroom	Floor	MA02-0933	11/3/2011	AM	50	10.0	475	47.5	7.89
	Bathroom	Floor	MA02-0934	11/3/2011	AM	50	10.1	439	43.4	7.21
	Bathroom	Floor	MA02-0978	11/3/2011	PM	50	10.1	450	44.8	7.45
	Bathroom	Floor	MA02-0979	11/3/2011	PM	50	10.0	442	44.1	7.33
	Bathroom	Floor	MA03-0935	11/4/2011	AM	50	9.98	423	42.4	7.05
	Bathroom	Floor	MA03-0936	11/4/2011	AM	50	10.0	323	32.3	5.37
	Bathroom	Floor	MA03-0980	11/4/2011	PM	50	10.1	387	38.4	6.38
	Bathroom	Floor	MA03-0981	11/4/2011	PM	50	10.0	408	40.7	6.77
	Bathroom	Floor	MA04-0937	11/5/2011	AM	50	10.1	407	40.1	6.68
	Bathroom	Floor	MA04-0938	11/5/2011	AM	50	10.1	418	41.3	6.86
	Bathroom	Floor	MA04-0982	11/5/2011	PM	50	8.26	301	36.4	6.06
	Bathroom	Floor	MA04-0983	11/5/2011	PM	50	10.0	413	41.2	6.86
	Bathroom	Floor	MA05-0939	11/6/2011	AM	50	10.0	422	42.1	7.00
	Bathroom	Floor	MA05-0940	11/6/2011	AM	50	8.05	311	38.6	6.43
	Bathroom	Floor	MA05-0984	11/6/2011	PM	50	10.6	411	38.8	6.45
	Bathroom	Floor	MA05-0985	11/6/2011	PM	50	8.03	319	39.7	6.61
	Bathroom	Floor	MA06-0941	11/7/2011	AM	50	10.5	385	36.8	6.13
	Bathroom	Floor	MA06-0942	11/7/2011	AM	50	7.87	303	38.5	6.40
	Bathroom	Floor	MA06-0986	11/7/2011	PM	50	10.8	396	36.5	6.08
	Bathroom	Floor	MA06-0987	11/7/2011	PM	50	8.14	304	37.3	6.21
	Bathroom	Floor	MA07-0943	11/8/2011	AM	50	8.30	257	31.0	5.15
	Bathroom	Floor	MA07-0944	11/8/2011	AM	50	11.1	342	30.8	5.12
	Bathroom	Floor	MA07-0988	11/8/2011	PM	50	8.16	294	36.0	5.99
	Bathroom	Floor	MA07-0989	11/8/2011	PM	50	10.9	371	34.0	5.65

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 6. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
9	Bedroom	5 Feet	MA01-0032	11/1/2011	AM	52	10.6	ND ^b	0.00946	0.00157
	Bedroom	5 Feet	MA01-0901	11/2/2011	AM	50	10.2	370	36.3	6.04
	Bedroom	5 Feet	MA01-0902	11/2/2011	AM	50	10.1	363	35.8	5.95
	Bedroom	5 Feet	MA01-0946	11/2/2011	PM	50	10.0	317	31.6	5.26
	Bedroom	5 Feet	MA01-0947	11/2/2011	PM	50	10.1	479	47.7	7.93
	Bedroom	5 Feet	MA02-0903	11/3/2011	AM	50	10.1	500	49.7	8.27
	Bedroom	5 Feet	MA02-0904	11/3/2011	AM	50	10.0	447	44.7	7.43
	Bedroom	5 Feet	MA02-0948	11/3/2011	PM	50	10.0	451	45.0	7.48
	Bedroom	5 Feet	MA02-0949	11/3/2011	PM	50	10.0	352	35.1	5.84
	Bedroom	5 Feet	MA03-0905	11/4/2011	AM	50	10.0	449	44.9	7.47
	Bedroom	5 Feet	MA03-0906	11/4/2011	AM	50	9.99	428	42.8	7.13
	Bedroom	5 Feet	MA03-0950	11/4/2011	PM	50	10.0	428	42.7	7.10
	Bedroom	5 Feet	MA03-0951	11/4/2011	PM	50	10.0	372	37.2	6.18
	Bedroom	5 Feet	MA04-0907	11/5/2011	AM	50	10.1	416	41.2	6.86
	Bedroom	5 Feet	MA04-0908	11/5/2011	AM	50	10.1	394	39.0	6.49
	Bedroom	5 Feet	MA04-0952	11/5/2011	PM	50	10.0	450	45.0	7.48
	Bedroom	5 Feet	MA04-0953	11/5/2011	PM	50	10.0	420	42.0	6.98
	Bedroom	5 Feet	MA05-0909	11/6/2011	AM	50	10.0	433	43.1	7.17
	Bedroom	5 Feet	MA05-0910	11/6/2011	AM	50	7.58	308	40.6	6.76
	Bedroom	5 Feet	MA05-0954	11/6/2011	PM	50	10.1	480	47.8	7.94
	Bedroom	5 Feet	MA05-0955	11/6/2011	PM	50	10.1	477	47.3	7.86
	Bedroom	5 Feet	MA06-0911	11/7/2011	AM	50	10.0	380	38.0	6.31
	Bedroom	5 Feet	MA06-0912	11/7/2011	AM	50	10.0	399	39.9	6.63
	Bedroom	5 Feet	MA06-0956	11/7/2011	PM	50	10.0	411	41.0	6.82
	Bedroom	5 Feet	MA06-0957	11/7/2011	PM	50	10.0	409	40.8	6.79
	Bedroom	5 Feet	MA07-0913	11/8/2011	AM	51	10.3	409	39.9	6.63
	Bedroom	5 Feet	MA07-0914	11/8/2011	AM	51	10.3	388	37.8	6.28
	Bedroom	5 Feet	MA07-0958	11/8/2011	PM	51	10.4	719	69.2	11.5
	Bedroom	5 Feet	MA07-0959	11/8/2011	PM	51	10.3	463	44.9	7.47

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 6. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
9	Bedroom	Floor	MA01-0916	11/2/2011	AM	50	10.1	353	34.8	5.80
	Bedroom	Floor	MA01-0917	11/2/2011	AM	50	10.1	383	37.8	6.29
	Bedroom	Floor	MA01-0961	11/2/2011	PM	50	10.0	460	45.8	7.62
	Bedroom	Floor	MA01-0962	11/2/2011	PM	50	10.1	72	7.14	1.19
	Bedroom	Floor	MA02-0918	11/3/2011	AM	50	10.0	302	30.1	5.00
	Bedroom	Floor	MA02-0919	11/3/2011	AM	50	10.1	437	43.3	7.20
	Bedroom	Floor	MA02-0963	11/3/2011	PM	50	10.0	467	46.6	7.75
	Bedroom	Floor	MA02-0964	11/3/2011	PM	50	10.0	483	48.2	8.01
	Bedroom	Floor	MA03-0920	11/4/2011	AM	50	10.0	461	46.1	7.67
	Bedroom	Floor	MA03-0921	11/4/2011	AM	50	10.1	413	41.1	6.83
	Bedroom	Floor	MA03-0965	11/4/2011	PM	50	10.0	304	30.3	5.04
	Bedroom	Floor	MA03-0966	11/4/2011	PM	50	10.0	418	41.6	6.92
	Bedroom	Floor	MA04-0922	11/5/2011	AM	50	10.1	346	34.3	5.70
	Bedroom	Floor	MA04-0923	11/5/2011	AM	50	10.1	398	39.4	6.55
	Bedroom	Floor	MA04-0967	11/5/2011	PM	50	10.0	429	42.8	7.12
	Bedroom	Floor	MA04-0968	11/5/2011	PM	50	7.63	274	35.9	5.97
	Bedroom	Floor	MA05-0924	11/6/2011	AM	50	10.1	463	45.8	7.62
	Bedroom	Floor	MA05-0925	11/6/2011	AM	50	10.1	444	44.1	7.33
	Bedroom	Floor	MA05-0969	11/6/2011	PM	50	10.0	431	43.0	7.15
	Bedroom	Floor	MA05-0970	11/6/2011	PM	50	10.0	436	43.5	7.24
	Bedroom	Floor	MA06-0926	11/7/2011	AM	50	10.0	434	43.4	7.21
	Bedroom	Floor	MA06-0927	11/7/2011	AM	50	10.0	436	43.6	7.24
	Bedroom	Floor	MA06-0971	11/7/2011	PM	50	10.1	409	40.5	6.74
	Bedroom	Floor	MA06-0972	11/7/2011	PM	50	10.1	423	41.9	6.97
	Bedroom	Floor	MA07-0928	11/8/2011	AM	51	10.4	371	35.7	5.94
	Bedroom	Floor	MA07-0929	11/8/2011	AM	52	10.4	375	35.9	5.97
	Bedroom	Floor	MA07-0973	11/8/2011	PM	52	10.5	402	38.4	6.39
	Bedroom	Floor	MA07-0974	11/8/2011	PM	51	10.3	407	39.4	6.55

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 6. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
10	Bathroom	Floor	MA01-1031	11/2/2011	AM	50	10.1	381	37.9	6.30
	Bathroom	Floor	MA01-1032	11/2/2011	AM	50	7.92	254	32.1	5.33
	Bathroom	Floor	MA01-1076	11/2/2011	PM	51	10.3	439	42.8	7.12
	Bathroom	Floor	MA01-1077	11/2/2011	PM	51	10.3	428	41.6	6.92
	Bathroom	Floor	MA02-1033	11/3/2011	AM	50	10.2	481	47.3	7.87
	Bathroom	Floor	MA02-1034	11/3/2011	AM	50	10.1	472	46.5	7.74
	Bathroom	Floor	MA02-1078	11/3/2011	PM	50	10.1	453	45.0	7.49
	Bathroom	Floor	MA02-1079	11/3/2011	PM	50	10.1	320	31.7	5.27
	Bathroom	Floor	MA03-1035	11/4/2011	AM	50	10.0	460	46.0	7.64
	Bathroom	Floor	MA03-1036	11/4/2011	AM	50	10.0	453	45.2	7.51
	Bathroom	Floor	MA03-1080	11/4/2011	PM	50	10.0	208	20.7	3.45
	Bathroom	Floor	MA03-1081	11/4/2011	PM	50	10.0	446	44.6	7.41
	Bathroom	Floor	MA04-1037	11/5/2011	AM	50	10.0	407	40.7	6.77
	Bathroom	Floor	MA04-1038	11/5/2011	AM	50	10.0	408	40.8	6.79
	Bathroom	Floor	MA04-1082	11/5/2011	PM	50	10.0	478	47.6	7.92
	Bathroom	Floor	MA04-1083	11/5/2011	PM	50	10.0	462	46.1	7.66
	Bathroom	Floor	MA05-1039	11/6/2011	AM	52	10.5	474	45.2	7.52
	Bathroom	Floor	MA05-1040	11/6/2011	AM	52	10.4	459	44.0	7.31
	Bathroom	Floor	MA05-1084	11/6/2011	PM	50	10.1	529	52.4	8.71
	Bathroom	Floor	MA05-1085	11/6/2011	PM	50	10.1	540	53.4	8.88
	Bathroom	Floor	MA06-1041	11/7/2011	AM	50	10.0	437	43.7	7.26
	Bathroom	Floor	MA06-1042	11/7/2011	AM	50	10.0	436	43.6	7.24
	Bathroom	Floor	MA06-1086	11/7/2011	PM	51	10.2	517	50.5	8.40
	Bathroom	Floor	MA06-1087	11/7/2011	PM	51	10.2	493	48.2	8.01
	Bathroom	Floor	MA07-1043	11/8/2011	AM	60	12.1	502	41.5	6.91
	Bathroom	Floor	MA07-1044	11/8/2011	AM	60	12.1	525	43.5	7.23
	Bathroom	Floor	MA07-1088	11/8/2011	PM	50	10.1	4071	405	67.4
	Bathroom	Floor	MA07-1089	11/8/2011	PM	50	10.0	4126	411	68.3

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 6. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
10	Bedroom	5 Feet	MA01-0033	11/1/2011	AM	52	10.5	ND	0.00952	0.00158
	Bedroom	5 Feet	MA01-1001	11/2/2011	AM	51	10.4	394	37.9	6.31
	Bedroom	5 Feet	MA01-1002	11/2/2011	AM	50	9.83	308	31.3	5.21
	Bedroom	5 Feet	MA01-1046	11/2/2011	PM	50	10.1	575	57.2	9.51
	Bedroom	5 Feet	MA01-1047	11/2/2011	PM	50	10.3	509	49.6	8.24
	Bedroom	5 Feet	MA02-1003	11/3/2011	AM	50	10.0	466	46.5	7.73
	Bedroom	5 Feet	MA02-1004	11/3/2011	AM	50	0.023	2.51	109	18.2
	Bedroom	5 Feet	MA02-1048	11/3/2011	PM	50	7.55	339	44.9	7.47
	Bedroom	5 Feet	MA02-1049	11/3/2011	PM	50	10.1	488	48.3	8.04
	Bedroom	5 Feet	MA03-1005	11/4/2011	AM	50	10.0	459	45.8	7.61
	Bedroom	5 Feet	MA03-1006	11/4/2011	AM	50	7.54	317	42.0	6.99
	Bedroom	5 Feet	MA03-1050	11/4/2011	PM	50	10.0	460	45.9	7.63
	Bedroom	5 Feet	MA03-1051	11/4/2011	PM	50	7.57	317	41.9	6.96
	Bedroom	5 Feet	MA04-1007	11/5/2011	AM	50	10.1	191	18.9	3.15
	Bedroom	5 Feet	MA04-1008	11/5/2011	AM	50	7.63	292	38.3	6.36
	Bedroom	5 Feet	MA04-1052	11/5/2011	PM	50	10.1	465	46.2	7.68
	Bedroom	5 Feet	MA04-1053	11/5/2011	PM	50	10.6	445	42.1	7.01
	Bedroom	5 Feet	MA05-1009	11/6/2011	AM	51	10.3	507	49.2	8.18
	Bedroom	5 Feet	MA05-1010	11/6/2011	AM	50	10.8	460	42.7	7.10
	Bedroom	5 Feet	MA05-1054	11/6/2011	PM	50	10.0	447	44.7	7.43
	Bedroom	5 Feet	MA05-1055	11/6/2011	PM	50	10.1	527	52.4	8.71
	Bedroom	5 Feet	MA06-1011	11/7/2011	AM	50	10.0	505	50.4	8.39
	Bedroom	5 Feet	MA06-1012	11/7/2011	AM	50	10.0	493	49.2	8.18
	Bedroom	5 Feet	MA06-1056	11/7/2011	PM	50	10.2	515	50.7	8.44
	Bedroom	5 Feet	MA06-1057	11/7/2011	PM	50	10.2	525	51.7	8.59
	Bedroom	5 Feet	MA07-1013	11/8/2011	AM	60	12.0	609	50.6	8.42
	Bedroom	5 Feet	MA07-1014	11/8/2011	AM	60	12.0	643	53.4	8.88
	Bedroom	5 Feet	MA07-1058	11/8/2011	PM	50	10.0	430	42.9	7.13
	Bedroom	5 Feet	MA07-1059	11/8/2011	PM	50	10.1	409	40.6	6.75

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 6. Air Sample Data for the Hotel Rooms with the Bathroom Door Open – Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
10	Bedroom	Floor	MA01-1016	11/2/2011	AM	50	6.47	206	31.8	5.30
	Bedroom	Floor	MA01-1017	11/2/2011	AM	52	10.5	395	37.8	6.29
	Bedroom	Floor	MA01-1061	11/2/2011	PM	50	10.1	439	43.3	7.20
	Bedroom	Floor	MA01-1062	11/2/2011	PM	50	11.4	460	40.5	6.73
	Bedroom	Floor	MA02-1018	11/3/2011	AM	50	10.1	449	44.4	7.39
	Bedroom	Floor	MA02-1019	11/3/2011	AM	50	10.1	476	47.1	7.84
	Bedroom	Floor	MA02-1063	11/3/2011	PM	50	7.89	353	44.7	7.44
	Bedroom	Floor	MA02-1064	11/3/2011	PM	50	10.1	471	46.9	7.79
	Bedroom	Floor	MA03-1020	11/4/2011	AM	50	7.68	324	42.2	7.02
	Bedroom	Floor	MA03-1021	11/4/2011	AM	50	10.0	209	20.9	3.47
	Bedroom	Floor	MA03-1065	11/4/2011	PM	50	7.52	310	41.2	6.86
	Bedroom	Floor	MA03-1066	11/4/2011	PM	50	10.0	467	46.6	7.75
	Bedroom	Floor	MA04-1022	11/5/2011	AM	50	7.66	313	40.9	6.80
	Bedroom	Floor	MA04-1023	11/5/2011	AM	50	10.0	423	42.2	7.01
	Bedroom	Floor	MA04-1067	11/5/2011	PM	50	10.7	445	41.7	6.94
	Bedroom	Floor	MA04-1068	11/5/2011	PM	50	10.1	467	46.5	7.73
	Bedroom	Floor	MA05-1024	11/6/2011	AM	50	10.9	479	43.9	7.30
	Bedroom	Floor	MA05-1025	11/6/2011	AM	51	10.3	427	41.3	6.87
	Bedroom	Floor	MA05-1069	11/6/2011	PM	50	10.1	511	50.4	8.38
	Bedroom	Floor	MA05-1070	11/6/2011	PM	50	10.2	587	57.8	9.61
	Bedroom	Floor	MA06-1026	11/7/2011	AM	50	10.0	473	47.3	7.86
	Bedroom	Floor	MA06-1027	11/7/2011	AM	50	10.0	462	46.2	7.68
	Bedroom	Floor	MA06-1071	11/7/2011	PM	50	10.2	453	44.5	7.41
	Bedroom	Floor	MA06-1072	11/7/2011	PM	50	10.2	448	44.1	7.33
	Bedroom	Floor	MA07-1028	11/8/2011	AM	59	12.0	538	45.0	7.49
	Bedroom	Floor	MA07-1029	11/8/2011	AM	60	12.1	537	44.6	7.41
	Bedroom	Floor	MA07-1073	11/8/2011	PM	50	10.1	415	41.3	6.87
	Bedroom	Floor	MA07-1074	11/8/2011	PM	50	10.0	370	36.9	6.14

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 7. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
4	Bathroom	Floor	MA01-0431	8/24/2011	AM	50	10.1	2841	282	46.9
	Bathroom	Floor	MA01-0432	8/24/2011	AM	50	10.1	3099	307	51.0
	Bathroom	Floor	MA01-0476	8/24/2011	PM	50	10.0	37.3	3.72	0.619
	Bathroom	Floor	MA01-0477	8/24/2011	PM	50	10.0	2380	238	39.5
	Bathroom	Floor	MA02-0433	8/25/2011	AM	50	10.0	4308	430	71.6
	Bathroom	Floor	MA02-0434	8/25/2011	AM	50	10.0	4901	490	81.4
	Bathroom	Floor	MA02-0478	8/25/2011	PM	50	10.1	4770	473	78.6
	Bathroom	Floor	MA02-0479	8/25/2011	PM	50	10.2	4157	409	68.0
	Bathroom	Floor	MA03-0435	8/26/2011	AM	50	10.0	206	20.5	3.41
	Bathroom	Floor	MA03-0436	8/26/2011	AM	50	10.1	3649	362	60.2
	Bathroom	Floor	MA03-0480	8/26/2011	PM	52	10.6	4366	413	68.6
	Bathroom	Floor	MA03-0481	8/26/2011	PM	52	10.6	4154	393	65.4
	Bathroom	Floor	MA04-0437	8/27/2011	AM	50	10.1	4574	454	75.5
	Bathroom	Floor	MA04-0438	8/27/2011	AM	50	10.1	4738	469	78.0
	Bathroom	Floor	MA04-0482	8/27/2011	PM	50	10.1	3892	385	64.0
	Bathroom	Floor	MA04-0483	8/27/2011	PM	50	10.1	3895	385	64.1
	Bathroom	Floor	MA05-0439	8/28/2011	AM	50	10.1	3598	358	59.5
	Bathroom	Floor	MA05-0440	8/28/2011	AM	50	10.1	3879	385	64.1
	Bathroom	Floor	MA05-0484	8/28/2011	PM	50	10.0	4615	461	76.6
	Bathroom	Floor	MA05-0485	8/28/2011	PM	50	10.0	4769	475	79.0
	Bathroom	Floor	MA06-0441	8/29/2011	AM	50	10.1	4569	454	75.5
	Bathroom	Floor	MA06-0442	8/29/2011	AM	50	10.1	4511	448	74.5
	Bathroom	Floor	MA06-0486	8/29/2011	PM	50	10.0	3572	356	59.3
	Bathroom	Floor	MA06-0487	8/29/2011	PM	50	10.0	3683	367	61.0
	Bathroom	Floor	MA07-0443	8/30/2011	AM	50	10.0	4898	488	81.1
	Bathroom	Floor	MA07-0444	8/30/2011	AM	50	10.0	4804	478	79.6
	Bathroom	Floor	MA07-0488	8/30/2011	PM	50	10.1	3545	353	58.7
	Bathroom	Floor	MA07-0489	8/30/2011	PM	50	10.0	3623	361	60.1

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 7. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
4	Bedroom	5 Feet	MA01-0401	8/24/2011	AM	50	10.0	146	14.6	2.42
	Bedroom	5 Feet	MA01-0402	8/24/2011	AM	50	10.0	142	14.2	2.36
	Bedroom	5 Feet	MA01-0446	8/24/2011	PM	50	10.0	36.4	3.63	0.604
	Bedroom	5 Feet	MA01-0447	8/24/2011	PM	50	10.1	34.9	3.45	0.574
	Bedroom	5 Feet	MA02-0403	8/25/2011	AM	47	9.40	179	19.0	3.17
	Bedroom	5 Feet	MA02-0404	8/25/2011	AM	50	10.0	173	17.2	2.87
	Bedroom	5 Feet	MA02-0448	8/25/2011	PM	50	10.2	100	9.85	1.64
	Bedroom	5 Feet	MA02-0449	8/25/2011	PM	50	10.2	101	9.95	1.65
	Bedroom	5 Feet	MA03-0405	8/26/2011	AM	50	10.0	207	20.7	3.44
	Bedroom	5 Feet	MA03-0406	8/26/2011	AM	50	10.0	211	21.0	3.50
	Bedroom	5 Feet	MA03-0450	8/26/2011	PM	52	10.6	78	7.36	1.22
	Bedroom	5 Feet	MA03-0451	8/26/2011	PM	53	10.6	74	6.98	1.16
	Bedroom	5 Feet	MA04-0407	8/27/2011	AM	50	10.1	236	23.4	3.89
	Bedroom	5 Feet	MA04-0408	8/27/2011	AM	50	10.1	249	24.7	4.11
	Bedroom	5 Feet	MA04-0452	8/27/2011	PM	50	10.1	123	12.1	2.02
	Bedroom	5 Feet	MA04-0453	8/27/2011	PM	50	10.2	133	13.1	2.18
	Bedroom	5 Feet	MA05-0409	8/28/2011	AM	50	10.0	194	19.4	3.22
	Bedroom	5 Feet	MA05-0410	8/28/2011	AM	50	10.0	193	19.2	3.20
	Bedroom	5 Feet	MA05-0454	8/28/2011	PM	50	10.0	103	10.3	1.71
	Bedroom	5 Feet	MA05-0455	8/28/2011	PM	50	10.0	96	9.59	1.60
	Bedroom	5 Feet	MA06-0411	8/29/2011	AM	50	10.1	538	53.4	8.89
	Bedroom	5 Feet	MA06-0412	8/29/2011	AM	50	10.1	557	55.3	9.19
	Bedroom	5 Feet	MA06-0456	8/29/2011	PM	50	10.0	104	10.4	1.72
	Bedroom	5 Feet	MA06-0457	8/29/2011	PM	50	10.0	101	10.1	1.68
	Bedroom	5 Feet	MA07-0413	8/30/2011	AM	50	10.0	269	26.9	4.47
	Bedroom	5 Feet	MA07-0414	8/30/2011	AM	50	10.0	277	27.7	4.61
	Bedroom	5 Feet	MA07-0458	8/30/2011	PM	50	10.0	178	17.8	2.95
	Bedroom	5 Feet	MA07-0459	8/30/2011	PM	50	10.0	179	17.9	2.97

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 7. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
4	Bedroom	Floor	MA01-0004	8/23/2011	PM	62	12.6	ND ^b	0.00795	0.00
	Bedroom	Floor	MA01-0416	8/24/2011	AM	50	10.1	124	12.3	2.05
	Bedroom	Floor	MA01-0417	8/24/2011	AM	50	10.0	120	12.0	1.99
	Bedroom	Floor	MA01-0461	8/24/2011	PM	50	10.0	37.1	3.70	0.615
	Bedroom	Floor	MA01-0462	8/24/2011	PM	50	10.0	2926	292	48.6
	Bedroom	Floor	MA02-0418	8/25/2011	AM	50	10.0	201	20.0	3.33
	Bedroom	Floor	MA02-0419	8/25/2011	AM	51	10.2	183	17.9	2.98
	Bedroom	Floor	MA02-0463	8/25/2011	PM	50	10.0	84.7	8.44	1.40
	Bedroom	Floor	MA02-0464	8/25/2011	PM	50	10.0	87.8	8.75	1.46
	Bedroom	Floor	MA03-0420	8/26/2011	AM	50	10.1	3904	388	64.6
	Bedroom	Floor	MA03-0421	8/26/2011	AM	50	10.0	204	20.4	3.39
	Bedroom	Floor	MA03-0465	8/26/2011	PM	52	10.4	63	6.05	1.01
	Bedroom	Floor	MA03-0466	8/26/2011	PM	52	10.4	71	6.80	1.13
	Bedroom	Floor	MA04-0422	8/27/2011	AM	50	10.0	248	24.7	4.11
	Bedroom	Floor	MA04-0423	8/27/2011	AM	50	10.0	255	25.4	4.23
	Bedroom	Floor	MA04-0467	8/27/2011	PM	50	10.1	128	12.7	2.11
	Bedroom	Floor	MA04-0468	8/27/2011	PM	50	10.1	133	13.1	2.19
	Bedroom	Floor	MA05-0424	8/28/2011	AM	50	10.0	213	21.3	3.54
	Bedroom	Floor	MA05-0425	8/28/2011	AM	50	10.0	212	21.2	3.52
	Bedroom	Floor	MA05-0469	8/28/2011	PM	50	10.0	110	11.0	1.83
	Bedroom	Floor	MA05-0470	8/28/2011	PM	50	10.0	109	10.9	1.81
	Bedroom	Floor	MA06-0426	8/29/2011	AM	50	10.0	539	53.8	8.95
	Bedroom	Floor	MA06-0427	8/29/2011	AM	50	10.0	557	55.5	9.24
	Bedroom	Floor	MA06-0471	8/29/2011	PM	50	10.0	117	11.7	1.94
	Bedroom	Floor	MA06-0472	8/29/2011	PM	50	10.0	121	12.1	2.01
	Bedroom	Floor	MA07-0428	8/30/2011	AM	50	10.0	278	27.8	4.62
	Bedroom	Floor	MA07-0429	8/30/2011	AM	50	10.0	296	29.6	4.92
	Bedroom	Floor	MA07-0473	8/30/2011	PM	50	10.0	196	19.6	3.26
	Bedroom	Floor	MA07-0474	8/30/2011	PM	50	10.0	189	18.9	3.14

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 7. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
5	Bathroom	Floor	MA01-0531	8/24/2011	AM	52	10.6	2339	221	36.8
	Bathroom	Floor	MA01-0532	8/24/2011	AM	53	10.6	2350	221	36.8
	Bathroom	Floor	MA01-0576	8/24/2011	PM	50	10.0	3003	299	49.8
	Bathroom	Floor	MA01-0577	8/24/2011	PM	50	10.0	3757	375	62.4
	Bathroom	Floor	MA02-0533	8/25/2011	AM	50	10.0	4487	448	74.6
	Bathroom	Floor	MA02-0534	8/25/2011	AM	50	10.1	4393	437	72.6
	Bathroom	Floor	MA02-0578	8/25/2011	PM	52	10.6	4380	414	68.9
	Bathroom	Floor	MA02-0579	8/25/2011	PM	50	10.0	4430	442	73.5
	Bathroom	Floor	MA03-0535	8/26/2011	AM	50	10.0	3728	372	61.8
	Bathroom	Floor	MA03-0536	8/26/2011	AM	49	10.0	4105	411	68.3
	Bathroom	Floor	MA03-0580	8/26/2011	PM	54	10.8	4391	407	67.6
	Bathroom	Floor	MA03-0581	8/26/2011	PM	53	10.6	81.6	7.69	1.28
	Bathroom	Floor	MA04-0537	8/27/2011	AM	49	9.99	4335	434	72.2
	Bathroom	Floor	MA04-0538	8/27/2011	AM	51	10.3	4421	429	71.3
	Bathroom	Floor	MA04-0582	8/27/2011	PM	50	10.1	3400	336	55.8
	Bathroom	Floor	MA04-0583	8/27/2011	PM	50	10.1	4672	461	76.7
	Bathroom	Floor	MA05-0539	8/28/2011	AM	50	10.1	3553	352	58.6
	Bathroom	Floor	MA05-0540	8/28/2011	AM	51	10.4	3073	296	49.2
	Bathroom	Floor	MA05-0584	8/28/2011	PM	50	10.0	4204	419	69.6
	Bathroom	Floor	MA05-0585	8/28/2011	PM	50	10.0	4521	452	75.1
	Bathroom	Floor	MA06-0541	8/29/2011	AM	50	10.1	4346	429	71.4
	Bathroom	Floor	MA06-0542	8/29/2011	AM	51	10.4	4275	411	68.4
	Bathroom	Floor	MA06-0586	8/29/2011	PM	50	10.1	3221	320	53.3
	Bathroom	Floor	MA06-0587	8/29/2011	PM	50	10.0	3397	338	56.3
	Bathroom	Floor	MA07-0543	8/30/2011	AM	50	10.0	4428	442	73.6
	Bathroom	Floor	MA07-0544	8/30/2011	AM	50	10.0	4557	455	75.6
	Bathroom	Floor	MA07-0588	8/30/2011	PM	50	10.0	2852	284	47.2
	Bathroom	Floor	MA07-0589	8/30/2011	PM	51	10.4	2782	269	44.7

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 7. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
5	Bedroom	5 Feet	MA01-0501	8/24/2011	AM	53	10.7	149	14.0	2.32
	Bedroom	5 Feet	MA01-0502	8/24/2011	AM	51	10.4	152	14.7	2.44
	Bedroom	5 Feet	MA01-0546	8/24/2011	PM	50	10.0	53.3	5.31	0.883
	Bedroom	5 Feet	MA01-0547	8/24/2011	PM	50	10.0	50.9	5.08	0.846
	Bedroom	5 Feet	MA02-0503	8/25/2011	AM	50	10.1	113	11.2	1.87
	Bedroom	5 Feet	MA02-0504	8/25/2011	AM	50	10.0	107	10.7	1.78
	Bedroom	5 Feet	MA02-0548	8/25/2011	PM	50	10.0	78.0	7.77	1.29
	Bedroom	5 Feet	MA02-0549	8/25/2011	PM	50	10.1	80.8	8.03	1.34
	Bedroom	5 Feet	MA03-0505	8/26/2011	AM	50	10.0	89.0	8.88	1.48
	Bedroom	5 Feet	MA03-0506	8/26/2011	AM	50	10.0	90.7	9.05	1.51
	Bedroom	5 Feet	MA03-0550	8/26/2011	PM	54	11.0	81.7	7.44	1.24
	Bedroom	5 Feet	MA03-0551	8/26/2011	PM	53	10.8	4910	456	75.9
	Bedroom	5 Feet	MA04-0507	8/27/2011	AM	50	10.0	89	8.88	1.48
	Bedroom	5 Feet	MA04-0508	8/27/2011	AM	50	10.0	76	7.58	1.26
	Bedroom	5 Feet	MA04-0552	8/27/2011	PM	50	10.1	65	6.42	1.07
	Bedroom	5 Feet	MA04-0553	8/27/2011	PM	52	10.5	63	6.00	1.00
	Bedroom	5 Feet	MA05-0509	8/28/2011	AM	50	10.0	62	6.18	1.03
	Bedroom	5 Feet	MA05-0510	8/28/2011	AM	50	10.0	65	6.49	1.08
	Bedroom	5 Feet	MA05-0554	8/28/2011	PM	50	10.0	54	5.39	0.897
	Bedroom	5 Feet	MA05-0555	8/28/2011	PM			49		
	Bedroom	5 Feet	MA06-0511	8/29/2011	AM	50	10.0	87.3	8.70	1.45
	Bedroom	5 Feet	MA06-0512	8/29/2011	AM	50	10.1	86.8	8.63	1.44
	Bedroom	5 Feet	MA06-0556	8/29/2011	PM	51	10.3	70.8	6.89	1.15
	Bedroom	5 Feet	MA06-0557	8/29/2011	PM	50	10.0	72.9	7.29	1.21
	Bedroom	5 Feet	MA07-0513	8/30/2011	AM	50	10.0	114	11.4	1.89
	Bedroom	5 Feet	MA07-0514	8/30/2011	AM	51	10.3	123	11.9	1.98
	Bedroom	5 Feet	MA07-0558	8/30/2011	PM	50	10.0	80	7.98	1.33
	Bedroom	5 Feet	MA07-0559	8/30/2011	PM	50	10.0	80	7.97	1.33

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 7. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
5	Bedroom	Floor	MA01-0005	8/23/2011	PM	61	12.3	ND	0.00816	0.00136
	Bedroom	Floor	MA01-0516	8/24/2011	AM	52	10.5	166	15.9	2.64
	Bedroom	Floor	MA01-0517	8/24/2011	AM	52	10.5	163	15.5	2.58
	Bedroom	Floor	MA01-0561	8/24/2011	PM	50	10.0	41.6	4.14	0.689
	Bedroom	Floor	MA01-0562	8/24/2011	PM	50	10.0	41.5	4.14	0.689
	Bedroom	Floor	MA02-0518	8/25/2011	AM	50	10.0	98.6	9.85	1.64
	Bedroom	Floor	MA02-0519	8/25/2011	AM	50	9.98	100	10.0	1.67
	Bedroom	Floor	MA02-0563	8/25/2011	PM	50	10.2	70.8	6.95	1.16
	Bedroom	Floor	MA02-0564	8/25/2011	PM	50	10.1	68.4	6.77	1.13
	Bedroom	Floor	MA03-0520	8/26/2011	AM	50	10.2	88.9	8.72	1.45
	Bedroom	Floor	MA03-0521	8/26/2011	AM	50	10.0	94.7	9.45	1.57
	Bedroom	Floor	MA03-0565	8/26/2011	PM	53	10.7	87.0	8.14	1.35
	Bedroom	Floor	MA03-0566	8/26/2011	PM	53	10.7	85.2	7.95	1.32
	Bedroom	Floor	MA04-0522	8/27/2011	AM	50	10.0	87	8.70	1.45
	Bedroom	Floor	MA04-0523	8/27/2011	AM	50	10.1	84	8.35	1.39
	Bedroom	Floor	MA04-0567	8/27/2011	PM	50	10.1	53	5.26	0.874
	Bedroom	Floor	MA04-0568	8/27/2011	PM	50	10.1	57	5.67	0.942
	Bedroom	Floor	MA05-0524	8/28/2011	AM	50	10.0	63	6.29	1.05
	Bedroom	Floor	MA05-0525	8/28/2011	AM	50	10.0	59	5.89	0.980
	Bedroom	Floor	MA05-0569	8/28/2011	PM	50	10.0	48	4.79	0.796
	Bedroom	Floor	MA05-0570	8/28/2011	PM	50	10.0	49	4.89	0.813
	Bedroom	Floor	MA06-0526	8/29/2011	AM	50	10.1	87.8	8.74	1.45
	Bedroom	Floor	MA06-0527	8/29/2011	AM	50	10.1	87.9	8.75	1.45
	Bedroom	Floor	MA06-0571	8/29/2011	PM	50	10.0	76.7	7.65	1.27
	Bedroom	Floor	MA06-0572	8/29/2011	PM	50	10.0	60.7	6.06	1.01
	Bedroom	Floor	MA07-0528	8/30/2011	AM	50	10.0	114	11.4	1.89
	Bedroom	Floor	MA07-0529	8/30/2011	AM	50	10.0	104	10.4	1.73
	Bedroom	Floor	MA07-0573	8/30/2011	PM	50	10.0	82	8.18	1.36
	Bedroom	Floor	MA07-0574	8/30/2011	PM	50	10.1	89	8.86	1.47

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 7. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
6	Bathroom	Floor	MA01-0631	8/24/2011	AM	50	10.2	3696	363	60.4
	Bathroom	Floor	MA01-0632	8/24/2011	AM	50	8.75	3079	352	58.5
	Bathroom	Floor	MA01-0676	8/24/2011	PM	50	10.0	5851	584	97.1
	Bathroom	Floor	MA01-0677	8/24/2011	PM	50	10.4	5629	540	89.8
	Bathroom	Floor	MA02-0633	8/25/2011	AM	50	10.1	6304	626	104
	Bathroom	Floor	MA02-0634	8/25/2011	AM	50	10.8	5765	533	88.7
	Bathroom	Floor	MA02-0678	8/25/2011	PM	50	10.2	7371	726	121
	Bathroom	Floor	MA02-0679	8/25/2011	PM	50	9.53	6269	658	109
	Bathroom	Floor	MA03-0635	8/26/2011	AM	50	10.0	7908	790	131
	Bathroom	Floor	MA03-0636	8/26/2011	AM	50	9.20	6343	689	115
	Bathroom	Floor	MA03-0680	8/26/2011	PM	53	10.7	6494	609	101
	Bathroom	Floor	MA03-0681	8/26/2011	PM	50	9.81	5799	591	98.3
	Bathroom	Floor	MA04-0637	8/27/2011	AM	50	10.1	7197	714	119
	Bathroom	Floor	MA04-0638	8/27/2011	AM	50	9.28	6462	696	116
	Bathroom	Floor	MA04-0682	8/27/2011	PM	50	10.2	6423	633	105
	Bathroom	Floor	MA04-0683	8/27/2011	PM	50	9.28	5518	595	98.9
	Bathroom	Floor	MA05-0639	8/28/2011	AM	50	10.0	6631	661	110
	Bathroom	Floor	MA05-0640	8/28/2011	AM	50	9.46	5925	626	104
	Bathroom	Floor	MA05-0684	8/28/2011	PM	50	10.1	7572	753	125
	Bathroom	Floor	MA05-0685	8/28/2011	PM	50	9.46	6685	707	118
	Bathroom	Floor	MA06-0641	8/29/2011	AM	50	10.0	7086	706	117
	Bathroom	Floor	MA06-0642	8/29/2011	AM	50	9.41	6162	655	109
	Bathroom	Floor	MA06-0686	8/29/2011	PM	50	10.1	7313	728	121
	Bathroom	Floor	MA06-0687	8/29/2011	PM	50	9.37	6539	698	116
	Bathroom	Floor	MA07-0643	8/30/2011	AM	50	10.0	7281	725	121
	Bathroom	Floor	MA07-0644	8/30/2011	AM	50	9.32	5912	634	105
	Bathroom	Floor	MA07-0688	8/30/2011	PM	50	10.0	5149	514	85.6
	Bathroom	Floor	MA07-0689	8/30/2011	PM	50	9.30	4405	474	78.8

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 7. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
6	Bedroom	5 Feet	MA01-0601	8/24/2011	AM	50	10.1	268	26.5	4.40
	Bedroom	5 Feet	MA01-0602	8/24/2011	AM	50	10.1	259	25.6	4.26
	Bedroom	5 Feet	MA01-0646	8/24/2011	PM	50	10.0	157	15.7	2.61
	Bedroom	5 Feet	MA01-0647	8/24/2011	PM	50	10.0	164	16.4	2.72
	Bedroom	5 Feet	MA02-0603	8/25/2011	AM	50	10.1	282	28.1	4.67
	Bedroom	5 Feet	MA02-0604	8/25/2011	AM	50	10.0	287	28.6	4.76
	Bedroom	5 Feet	MA02-0648	8/25/2011	PM	50	10.1	210	20.9	3.47
	Bedroom	5 Feet	MA02-0649	8/25/2011	PM	51	10.3	214	20.8	3.47
	Bedroom	5 Feet	MA03-0605	8/26/2011	AM	50	10.0	141	14.1	2.34
	Bedroom	5 Feet	MA03-0606	8/26/2011	AM	50	10.0	140	14.0	2.32
	Bedroom	5 Feet	MA03-0650	8/26/2011	PM	54	10.9	182	16.7	2.77
	Bedroom	5 Feet	MA03-0651	8/26/2011	PM	53	10.7	223	20.8	3.46
	Bedroom	5 Feet	MA04-0607	8/27/2011	AM	50	10.0	207	20.6	3.43
	Bedroom	5 Feet	MA04-0608	8/27/2011	AM	50	10.1	206	20.5	3.41
	Bedroom	5 Feet	MA04-0652	8/27/2011	PM	50	10.0	190	18.9	3.15
	Bedroom	5 Feet	MA04-0653	8/27/2011	PM	50	10.0	185	18.5	3.07
	Bedroom	5 Feet	MA05-0609	8/28/2011	AM	50	10.0	154	15.4	2.56
	Bedroom	5 Feet	MA05-0610	8/28/2011	AM	50	10.0	142	14.2	2.36
	Bedroom	5 Feet	MA05-0654	8/28/2011	PM	50	10.0	236	23.6	3.92
	Bedroom	5 Feet	MA05-0655	8/28/2011	PM	50	10.0	219	21.9	3.64
	Bedroom	5 Feet	MA06-0611	8/29/2011	AM	50	10.0	218	21.8	3.62
	Bedroom	5 Feet	MA06-0612	8/29/2011	AM	50	10.0	212	21.2	3.52
	Bedroom	5 Feet	MA06-0656	8/29/2011	PM	50	10.0	210	20.9	3.48
	Bedroom	5 Feet	MA06-0657	8/29/2011	PM	50	10.1	214	21.2	3.53
	Bedroom	5 Feet	MA07-0613	8/30/2011	AM	50	10.0	326	32.6	5.42
	Bedroom	5 Feet	MA07-0614	8/30/2011	AM	50	10.0	341	34.1	5.67
	Bedroom	5 Feet	MA07-0658	8/30/2011	PM	50	10.0	202	20.2	3.35
	Bedroom	5 Feet	MA07-0659	8/30/2011	PM	41	8.24	177	21.5	3.57

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 7. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Summer Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
6	Bedroom	Floor	MA01-0006	8/23/2011	PM	59	11.9	0.31 ^c	0.0260	0.00433
	Bedroom	Floor	MA01-0616	8/24/2011	AM	50	10.1	263	26.0	4.32
	Bedroom	Floor	MA01-0617	8/24/2011	AM	50	10.1	261	25.8	4.29
	Bedroom	Floor	MA01-0661	8/24/2011	PM	50	10.0	124	12.4	2.06
	Bedroom	Floor	MA01-0662	8/24/2011	PM	50	10.0	118	11.8	1.96
	Bedroom	Floor	MA02-0618	8/25/2011	AM	50	10.1	264	26.1	4.34
	Bedroom	Floor	MA02-0619	8/25/2011	AM	50	10.0	266	26.5	4.42
	Bedroom	Floor	MA02-0663	8/25/2011	PM	51	10.2	197	19.3	3.20
	Bedroom	Floor	MA02-0664	8/25/2011	PM	51	10.3	205	19.9	3.31
	Bedroom	Floor	MA03-0620	8/26/2011	AM	50	10.0	141	14.1	2.34
	Bedroom	Floor	MA03-0621	8/26/2011	AM	50	10.1	145	14.4	2.39
	Bedroom	Floor	MA03-0665	8/26/2011	PM	52	10.6	222	21.0	3.50
	Bedroom	Floor	MA03-0666	8/26/2011	PM	52	10.5	212	20.1	3.35
	Bedroom	Floor	MA04-0622	8/27/2011	AM	50	10.1	198	19.7	3.27
	Bedroom	Floor	MA04-0623	8/27/2011	AM	50	10.1	193	19.1	3.18
	Bedroom	Floor	MA04-0667	8/27/2011	PM	50	10.0	188	18.8	3.12
	Bedroom	Floor	MA04-0668	8/27/2011	PM	50	10.0	185	18.5	3.07
	Bedroom	Floor	MA05-0624	8/28/2011	AM	50	10.0	155	15.4	2.57
	Bedroom	Floor	MA05-0625	8/28/2011	AM	50	10.0	151	15.1	2.50
	Bedroom	Floor	MA05-0669	8/28/2011	PM	50	10.0	231	23.1	3.84
	Bedroom	Floor	MA05-0670	8/28/2011	PM	50	10.0	213	21.3	3.54
	Bedroom	Floor	MA06-0626	8/29/2011	AM	50	10.0	222	22.2	3.69
	Bedroom	Floor	MA06-0627	8/29/2011	AM	50	10.0	222	22.2	3.69
	Bedroom	Floor	MA06-0671	8/29/2011	PM	50	10.0	187	18.6	3.10
	Bedroom	Floor	MA06-0672	8/29/2011	PM	50	10.0	183	18.2	3.03
	Bedroom	Floor	MA07-0628	8/30/2011	AM	50	10.0	339	33.9	5.63
	Bedroom	Floor	MA07-0629	8/30/2011	AM	50	10.0	334	33.4	5.55
	Bedroom	Floor	MA07-0673	8/30/2011	PM	50	10.0	211	21.1	3.51
	Bedroom	Floor	MA07-0674	8/30/2011	PM	50	10.0	192	19.2	3.19

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample; we used ½ LOD to calculate the concentrations.

^c Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 8. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/ PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
11	Bathroom	Floor	MA01-1131	11/2/2011	AM	50	10.0	4682	468	77.8
	Bathroom	Floor	MA01-1132	11/2/2011	AM	50	7.66	3276	428	71.1
	Bathroom	Floor	MA01-1176	11/2/2011	PM	50	10.0	6316	630	105
	Bathroom	Floor	MA01-1177	11/2/2011	PM	50	10.0	4740	473	78.7
	Bathroom	Floor	MA02-1133	11/3/2011	AM	50	10.1	4656	462	76.9
	Bathroom	Floor	MA02-1134	11/3/2011	AM	50	10.1	4411	438	72.9
	Bathroom	Floor	MA02-1178	11/3/2011	PM	50	10.1	6175	613	102
	Bathroom	Floor	MA02-1179	11/3/2011	PM	50	10.1	6437	638	106
	Bathroom	Floor	MA03-1135	11/4/2011	AM	50	10.2	3932	387	64.4
	Bathroom	Floor	MA03-1136	11/4/2011	AM	50	10.1	3960	392	65.1
	Bathroom	Floor	MA03-1180	11/4/2011	PM	50	10.0	5289	527	87.6
	Bathroom	Floor	MA03-1181	11/4/2011	PM	46	9.22	4879	529	88.0
	Bathroom	Floor	MA04-1137	11/5/2011	AM	50	10.1	4153	412	68.6
	Bathroom	Floor	MA04-1138	11/5/2011	AM	50	10.1	3844	379	63.1
	Bathroom	Floor	MA04-1182	11/5/2011	PM	55	11.2	1689	151	25.2
	Bathroom	Floor	MA04-1183	11/5/2011	PM	55	11.2	4357	389	64.7
	Bathroom	Floor	MA05-1139	11/6/2011	AM	52	10.5	3260	310	51.6
	Bathroom	Floor	MA05-1140	11/6/2011	AM	50	8.32	2499	300	50.0
	Bathroom	Floor	MA05-1184	11/6/2011	PM	50	10.9	4190	385	64.0
	Bathroom	Floor	MA05-1185	11/6/2011	PM	50	8.31	3310	398	66.2
	Bathroom	Floor	MA06-1141	11/7/2011	AM	50	10.1	3046	302	50.2
	Bathroom	Floor	MA06-1142	11/7/2011	AM	50	7.69	2363	307	51.1
	Bathroom	Floor	MA06-1186	11/7/2011	PM	50	10.7	4482	420	69.8
	Bathroom	Floor	MA06-1187	11/7/2011	PM	50	9.40	3786	403	67.0
	Bathroom	Floor	MA07-1143	11/8/2011	AM	50	2.05	482	235	39.1
	Bathroom	Floor	MA07-1144	11/8/2011	AM	50	7.92	1918	242	40.3
	Bathroom	Floor	MA07-1188	11/8/2011	PM	50	8.38	384	45.8	7.62
	Bathroom	Floor	MA07-1189	11/8/2011	PM	50	8.18	323	39.5	6.57

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample

^b Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 8. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
11	Bedroom	5 Feet	MA01-0034	11/1/2011	AM	51	10.3	0.22 ^b	0.0214	0.00356
	Bedroom	5 Feet	MA01-1101	11/2/2011	AM	50	10.0	144	14.4	2.39
	Bedroom	5 Feet	MA01-1102	11/2/2011	AM	50	7.24	88	12.2	2.02
	Bedroom	5 Feet	MA01-1146	11/2/2011	PM	50	10.0	256	25.6	4.25
	Bedroom	5 Feet	MA01-1147	11/2/2011	PM	50	8.10	183	22.6	3.76
	Bedroom	5 Feet	MA02-1103	11/3/2011	AM	50	10.0	196	19.6	3.26
	Bedroom	5 Feet	MA02-1104	11/3/2011	AM	50	7.80	139	17.8	2.96
	Bedroom	5 Feet	MA02-1148	11/3/2011	PM	50	10.0	344	34.3	5.70
	Bedroom	5 Feet	MA02-1149	11/3/2011	PM	50	10.2	361	35.3	5.87
	Bedroom	5 Feet	MA03-1105	11/4/2011	AM	50	10.0	256	25.5	4.25
	Bedroom	5 Feet	MA03-1106	11/4/2011	AM	50	10.1	226	22.3	3.71
	Bedroom	5 Feet	MA03-1150	11/4/2011	PM	50	10.0	283	28.2	4.69
	Bedroom	5 Feet	MA03-1151	11/4/2011	PM	50	10.2	276	27.1	4.51
	Bedroom	5 Feet	MA04-1107	11/5/2011	AM	50	10.1	315	31.3	5.21
	Bedroom	5 Feet	MA04-1108	11/5/2011	AM	50	8.10	272	33.6	5.58
	Bedroom	5 Feet	MA04-1152	11/5/2011	PM	55	11.1	366	32.9	5.47
	Bedroom	5 Feet	MA04-1153	11/5/2011	PM	55	11.2	352	31.5	5.24
	Bedroom	5 Feet	MA05-1109	11/6/2011	AM	50	10.1	323	31.9	5.31
	Bedroom	5 Feet	MA05-1110	11/6/2011	AM	50	10.1	296	29.3	4.87
	Bedroom	5 Feet	MA05-1154	11/6/2011	PM	52	10.5	377	35.9	5.98
	Bedroom	5 Feet	MA05-1155	11/6/2011	PM	52	10.5	355	33.9	5.63
	Bedroom	5 Feet	MA06-1111	11/7/2011	AM	50	10.1	323	32.1	5.34
	Bedroom	5 Feet	MA06-1112	11/7/2011	AM	50	10.1	321	31.9	5.31
	Bedroom	5 Feet	MA06-1156	11/7/2011	PM	50	10.0	399	39.9	6.63
	Bedroom	5 Feet	MA06-1157	11/7/2011	PM	50	10.0	387	38.5	6.41
	Bedroom	5 Feet	MA07-1113	11/8/2011	AM	50	10.1	359	35.7	5.94
	Bedroom	5 Feet	MA07-1114	11/8/2011	AM	50	10.0	314	31.3	5.21
	Bedroom	5 Feet	MA07-1158	11/8/2011	PM	51	10.2	480	46.9	7.80
	Bedroom	5 Feet	MA07-1159	11/8/2011	PM	51	10.2	480	46.9	7.80

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample

^b Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 8. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/ PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
11	Bedroom	Floor	MA01-1116	11/2/2011	AM	50	10.0	126	12.6	2.09
	Bedroom	Floor	MA01-1117	11/2/2011	AM	50	10.9	129	11.8	1.97
	Bedroom	Floor	MA01-1161	11/2/2011	PM	50	10.0	224	22.4	3.72
	Bedroom	Floor	MA01-1162	11/2/2011	PM	50	10.0	215	21.5	3.57
	Bedroom	Floor	MA02-1118	11/3/2011	AM	50	10.0	180	18.0	2.99
	Bedroom	Floor	MA02-1119	11/3/2011	AM	50	10.0	166	16.6	2.76
	Bedroom	Floor	MA02-1163	11/3/2011	PM	50	10.1	295	29.3	4.88
	Bedroom	Floor	MA02-1164	11/3/2011	PM	50	10.0	310	31.0	5.16
	Bedroom	Floor	MA03-1120	11/4/2011	AM	50	10.0	232	23.2	3.86
	Bedroom	Floor	MA03-1121	11/4/2011	AM	50	10.0	254	25.4	4.22
	Bedroom	Floor	MA03-1165	11/4/2011	PM	50	10.0	276	27.5	4.57
	Bedroom	Floor	MA03-1166	11/4/2011	PM	50	10.0	316	31.5	5.23
	Bedroom	Floor	MA04-1122	11/5/2011	AM	50	10.0	287	28.7	4.77
	Bedroom	Floor	MA04-1123	11/5/2011	AM	50	10.1	319	31.7	5.28
	Bedroom	Floor	MA04-1167	11/5/2011	PM	55	11.1	361	32.5	5.40
	Bedroom	Floor	MA04-1168	11/5/2011	PM	50	0.19	6.33	33.3	5.54
	Bedroom	Floor	MA05-1124	11/6/2011	AM	51	10.3	316	30.8	5.12
	Bedroom	Floor	MA05-1125	11/6/2011	AM	51	10.3	318	30.9	5.14
	Bedroom	Floor	MA05-1169	11/6/2011	PM	51	10.4	391	37.7	6.27
	Bedroom	Floor	MA05-1170	11/6/2011	PM	50	11.0	350	31.8	5.30
	Bedroom	Floor	MA06-1126	11/7/2011	AM	50	10.0	305	30.5	5.07
	Bedroom	Floor	MA06-1127	11/7/2011	AM	50	10.4	308	29.6	4.92
	Bedroom	Floor	MA06-1171	11/7/2011	PM	50	10.0	398	39.6	6.59
	Bedroom	Floor	MA06-1172	11/7/2011	PM	50	8.02	294	36.7	6.10
	Bedroom	Floor	MA07-1128	11/8/2011	AM	50	10.0	333	33.2	5.52
	Bedroom	Floor	MA07-1129	11/8/2011	AM	50	10.6	346	32.7	5.44
	Bedroom	Floor	MA07-1173	11/8/2011	PM	51	10.3	504	48.9	8.13
	Bedroom	Floor	MA07-1174	11/8/2011	PM	50	10.9	470	43.0	7.15

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample

^b Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 8. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/ PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
12	Bathroom	Floor	MA01-1231	11/2/2011	AM	50	10.0	2746	274	45.6
	Bathroom	Floor	MA01-1232	11/2/2011	AM	50	10.1	2757	274	45.5
	Bathroom	Floor	MA01-1276	11/2/2011	PM	50	10.1	4013	398	66.2
	Bathroom	Floor	MA01-1277	11/2/2011	PM	51	10.3	3805	368	61.3
	Bathroom	Floor	MA02-1233	11/3/2011	AM	51	10.4	3228	311	51.7
	Bathroom	Floor	MA02-1234	11/3/2011	AM	50	10.1	2975	296	49.2
	Bathroom	Floor	MA02-1278	11/3/2011	PM	50	10.0	2914	291	48.4
	Bathroom	Floor	MA02-1279	11/3/2011	PM	50	10.0	2878	287	47.7
	Bathroom	Floor	MA03-1235	11/4/2011	AM	50	10.1	2124	211	35.0
	Bathroom	Floor	MA03-1236	11/4/2011	AM	50	10.1	2123	211	35.0
	Bathroom	Floor	MA03-1280	11/4/2011	PM	50	10.1	2278	227	37.7
	Bathroom	Floor	MA03-1281	11/4/2011	PM	50	10.1	2403	238	39.6
	Bathroom	Floor	MA04-1237	11/5/2011	AM	50	10.0	2008	200	33.3
	Bathroom	Floor	MA04-1238	11/5/2011	AM	50	10.0	2074	207	34.4
	Bathroom	Floor	MA04-1282	11/5/2011	PM	53	10.7	90.4	8.42	1.40
	Bathroom	Floor	MA04-1283	11/5/2011	PM	53	10.7	2646	247	41.0
	Bathroom	Floor	MA05-1239	11/6/2011	AM	49	9.82	2408	245	40.8
	Bathroom	Floor	MA05-1240	11/6/2011	AM	49	9.83	2304	234	39.0
	Bathroom	Floor	MA05-1284	11/6/2011	PM	59	11.8	2384	202	33.6
	Bathroom	Floor	MA05-1285	11/6/2011	PM	59	11.8	2999	254	42.3
	Bathroom	Floor	MA06-1241	11/7/2011	AM	49	9.83	1919	195	32.5
	Bathroom	Floor	MA06-1242	11/7/2011	AM	49	9.83	2020	206	34.2
	Bathroom	Floor	MA06-1286	11/7/2011	PM	50	10.1	2507	249	41.4
	Bathroom	Floor	MA06-1287	11/7/2011	PM	51	10.1	181	17.9	2.97
	Bathroom	Floor	MA07-1243	11/8/2011	AM	50	10.1	1746	172	28.7
	Bathroom	Floor	MA07-1244	11/8/2011	AM	50	10.1	1775	176	29.3
	Bathroom	Floor	MA07-1288	11/8/2011	PM	50	10.0	2238	223	37.1
	Bathroom	Floor	MA07-1289	11/8/2011	PM	50	10.0	2094	209	34.8

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample

^b Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 8. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/ PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
12	Bedroom	5 Feet	MA01-0035	11/1/2011	AM	52	10.6	0.30 ^b	0.0284	0.00472
	Bedroom	5 Feet	MA01-1201	11/2/2011	AM	50	10.0	137	13.6	2.27
	Bedroom	5 Feet	MA01-1202	11/2/2011	AM	50	10.0	132	13.2	2.19
	Bedroom	5 Feet	MA01-1246	11/2/2011	PM	50	10.0	93	9.30	1.55
	Bedroom	5 Feet	MA01-1247	11/2/2011	PM	50	10.0	91	9.09	1.51
	Bedroom	5 Feet	MA02-1203	11/3/2011	AM	50	10.0	151	15.1	2.51
	Bedroom	5 Feet	MA02-1204	11/3/2011	AM	50	10.0	146	14.6	2.43
	Bedroom	5 Feet	MA02-1248	11/3/2011	PM	50	10.1	138	13.7	2.28
	Bedroom	5 Feet	MA02-1249	11/3/2011	PM	50	10.1	142	14.1	2.35
	Bedroom	5 Feet	MA03-1205	11/4/2011	AM	50	10.1	187	18.6	3.09
	Bedroom	5 Feet	MA03-1206	11/4/2011	AM	50	10.0	186	18.6	3.09
	Bedroom	5 Feet	MA03-1250	11/4/2011	PM	51	10.2	127	12.4	2.06
	Bedroom	5 Feet	MA03-1251	11/4/2011	PM	51	10.2	127	12.4	2.06
	Bedroom	5 Feet	MA04-1207	11/5/2011	AM	50	10.1	191	18.9	3.14
	Bedroom	5 Feet	MA04-1208	11/5/2011	AM	50	10.2	186	18.3	3.04
	Bedroom	5 Feet	MA04-1252	11/5/2011	PM	53	10.8	129	12.0	1.99
	Bedroom	5 Feet	MA04-1253	11/5/2011	PM	53	10.8	166	15.4	2.57
	Bedroom	5 Feet	MA05-1209	11/6/2011	AM	49	9.95	209	21.0	3.49
	Bedroom	5 Feet	MA05-1210	11/6/2011	AM	49	9.92	183	18.4	3.07
	Bedroom	5 Feet	MA05-1254	11/6/2011	PM	59	11.9	167	14.1	2.34
	Bedroom	5 Feet	MA05-1255	11/6/2011	PM	59	11.9	193	16.2	2.70
	Bedroom	5 Feet	MA06-1211	11/7/2011	AM	49	9.91	220	22.2	3.69
	Bedroom	5 Feet	MA06-1212	11/7/2011	AM	49	9.89	204	20.6	3.43
	Bedroom	5 Feet	MA06-1256	11/7/2011	PM	50	10.1	168	16.6	2.76
	Bedroom	5 Feet	MA06-1257	11/7/2011	PM	50	10.1	160	15.9	2.64
	Bedroom	5 Feet	MA07-1213	11/8/2011	AM	50	10.1	138	13.7	2.28
	Bedroom	5 Feet	MA07-1214	11/8/2011	AM	50	10.0	166	16.6	2.76
	Bedroom	5 Feet	MA07-1258	11/8/2011	PM	50	10.1	115	11.4	1.90
	Bedroom	5 Feet	MA07-1259	11/8/2011	PM	50	10.0	158	15.8	2.63

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample

^b Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 8. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/ PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
12	Bedroom	Floor	MA01-1216	11/2/2011	AM	50	10.0	140	14.0	2.33
	Bedroom	Floor	MA01-1217	11/2/2011	AM	50	10.1	134	13.3	2.21
	Bedroom	Floor	MA01-1261	11/2/2011	PM	50	10.0	87	8.69	1.45
	Bedroom	Floor	MA01-1262	11/2/2011	PM	50	10.0	86	8.59	1.43
	Bedroom	Floor	MA02-1218	11/3/2011	AM	50	10.0	158	15.8	2.63
	Bedroom	Floor	MA02-1219	11/3/2011	AM	50	10.0	155	15.5	2.58
	Bedroom	Floor	MA02-1263	11/3/2011	PM	50	10.0	149	14.8	2.47
	Bedroom	Floor	MA02-1264	11/3/2011	PM	50	10.0	135	13.5	2.24
	Bedroom	Floor	MA03-1220	11/4/2011	AM	50	10.1	185	18.4	3.06
	Bedroom	Floor	MA03-1221	11/4/2011	AM	50	10.0	188	18.8	3.12
	Bedroom	Floor	MA03-1265	11/4/2011	PM	50	10.2	138	13.6	2.26
	Bedroom	Floor	MA03-1266	11/4/2011	PM	50	10.2	140	13.7	2.28
	Bedroom	Floor	MA04-1222	11/5/2011	AM	50	10.0	199	19.9	3.30
	Bedroom	Floor	MA04-1223	11/5/2011	AM	50	10.0	216	21.6	3.59
	Bedroom	Floor	MA04-1267	11/5/2011	PM	53	10.7	171	16.0	2.65
	Bedroom	Floor	MA04-1268	11/5/2011	PM	53	10.7	2595	242	40.3
	Bedroom	Floor	MA05-1224	11/6/2011	AM	49	9.85	198	20.1	3.34
	Bedroom	Floor	MA05-1225	11/6/2011	AM	49	9.84	160	16.3	2.70
	Bedroom	Floor	MA05-1269	11/6/2011	PM	59	11.9	183	15.4	2.57
	Bedroom	Floor	MA05-1270	11/6/2011	PM	59	11.9	193	16.2	2.70
	Bedroom	Floor	MA06-1226	11/7/2011	AM	48	9.78	215	22.0	3.66
	Bedroom	Floor	MA06-1227	11/7/2011	AM	48	9.78	156	16.0	2.65
	Bedroom	Floor	MA06-1271	11/7/2011	PM	50	10.1	2233	221	36.8
	Bedroom	Floor	MA06-1272	11/7/2011	PM	50	10.1	127	12.5	2.09
	Bedroom	Floor	MA07-1228	11/8/2011	AM	50	10.1	199	19.8	3.29
	Bedroom	Floor	MA07-1229	11/8/2011	AM	50	10.1	188	18.6	3.10
	Bedroom	Floor	MA07-1273	11/8/2011	PM	50	10.0	154	15.4	2.56
	Bedroom	Floor	MA07-1274	11/8/2011	PM	50	10.0	159	15.9	2.64

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample

^b Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 8. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/ PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
13	Bathroom	Floor	MA01-1331	11/2/2011	AM	50	10.1	3537	351	58.4
	Bathroom	Floor	MA01-1332	11/2/2011	AM	50	10.1	3165	315	52.3
	Bathroom	Floor	MA01-1376	11/2/2011	PM	50	10.0	3972	397	66.0
	Bathroom	Floor	MA01-1377	11/2/2011	PM	50	10.7	3774	352	58.5
	Bathroom	Floor	MA02-1333	11/3/2011	AM	50	8.20	2816	343	57.1
	Bathroom	Floor	MA02-1334	11/3/2011	AM	50	10.0	3525	351	58.5
	Bathroom	Floor	MA02-1378	11/3/2011	PM	50	10.1	3819	378	62.9
	Bathroom	Floor	MA02-1379	11/3/2011	PM	50	10.1	3763	373	62.1
	Bathroom	Floor	MA03-1335	11/4/2011	AM	50	10.5	3050	290	48.3
	Bathroom	Floor	MA03-1336	11/4/2011	AM	50	10.0	3282	327	54.4
	Bathroom	Floor	MA03-1380	11/4/2011	PM	50	10.1	53.2	5.26	0.88
	Bathroom	Floor	MA03-1381	11/4/2011	PM	50	10.1	2953	291	48.4
	Bathroom	Floor	MA04-1337	11/5/2011	AM	50	10.0	2998	299	49.7
	Bathroom	Floor	MA04-1338	11/5/2011	AM	50	10.0	186	18.6	3.09
	Bathroom	Floor	MA04-1382	11/5/2011	PM	53	10.7	3497	326	54.3
	Bathroom	Floor	MA04-1383	11/5/2011	PM	53	10.7	3252	303	50.5
	Bathroom	Floor	MA05-1339	11/6/2011	AM	50	10.0	3456	345	57.3
	Bathroom	Floor	MA05-1340	11/6/2011	AM	50	10.0	3622	362	60.2
	Bathroom	Floor	MA05-1384	11/6/2011	PM	59	11.8	3679	312	51.8
	Bathroom	Floor	MA05-1385	11/6/2011	PM	59	11.8	3984	337	56.1
	Bathroom	Floor	MA06-1341	11/7/2011	AM	50	10.2	3035	298	49.6
	Bathroom	Floor	MA06-1342	11/7/2011	AM	52	10.5	3036	289	48.0
	Bathroom	Floor	MA06-1386	11/7/2011	PM	50	10.0	2778	277	46.1
	Bathroom	Floor	MA06-1387	11/7/2011	PM	50	10.0	2554	255	42.4
	Bathroom	Floor	MA07-1343	11/8/2011	AM	51	10.3	2770	268	44.6
	Bathroom	Floor	MA07-1344	11/8/2011	AM	50	10.0	2884	288	47.9
	Bathroom	Floor	MA07-1388	11/8/2011	PM	50	10.0	2670	266	44.2
	Bathroom	Floor	MA07-1389	11/8/2011	PM	50	10.0	2685	268	44.5

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample

^b Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 8. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
13	Bedroom	5 Feet	MA01-0036	11/1/2011	AM	52	10.7	0.27 ^b	0.0252	0.00420
	Bedroom	5 Feet	MA01-1301	11/2/2011	AM	50	10.1	76	7.56	1.26
	Bedroom	5 Feet	MA01-1302	11/2/2011	AM	50	10.1	71.9	7.14	1.19
	Bedroom	5 Feet	MA01-1346	11/2/2011	PM	50	10.0	42.5	4.24	0.705
	Bedroom	5 Feet	MA01-1347	11/2/2011	PM	50	8.43	35.2	4.18	0.694
	Bedroom	5 Feet	MA02-1303	11/3/2011	AM	50	10.0	59.8	5.97	0.994
	Bedroom	5 Feet	MA02-1304	11/3/2011	AM	50	10.0	59.2	5.92	0.985
	Bedroom	5 Feet	MA02-1348	11/3/2011	PM	50	10.5	42.4	4.03	0.671
	Bedroom	5 Feet	MA02-1349	11/3/2011	PM	50	10.0	44.3	4.43	0.737
	Bedroom	5 Feet	MA03-1305	11/4/2011	AM	50	10.0	83.2	8.30	1.38
	Bedroom	5 Feet	MA03-1306	11/4/2011	AM	50	10.0	85.2	8.51	1.42
	Bedroom	5 Feet	MA03-1350	11/4/2011	PM	50	10.2	59.1	5.79	0.964
	Bedroom	5 Feet	MA03-1351	11/4/2011	PM	50	10.6	53.8	5.06	0.842
	Bedroom	5 Feet	MA04-1307	11/5/2011	AM	50	10.1	82.0	8.13	1.35
	Bedroom	5 Feet	MA04-1308	11/5/2011	AM	50	10.4	81.0	7.80	1.30
	Bedroom	5 Feet	MA04-1352	11/5/2011	PM	53	10.7	79.8	7.44	1.24
	Bedroom	5 Feet	MA04-1353	11/5/2011	PM	53	10.7	80.4	7.49	1.25
	Bedroom	5 Feet	MA05-1309	11/6/2011	AM	50	10.0	77.2	7.70	1.28
	Bedroom	5 Feet	MA05-1310	11/6/2011	AM	50	10.0	72.0	7.19	1.20
	Bedroom	5 Feet	MA05-1354	11/6/2011	PM	59	11.9	64.9	5.46	0.909
	Bedroom	5 Feet	MA05-1355	11/6/2011	PM	61	12.2	62.7	5.12	0.852
	Bedroom	5 Feet	MA06-1311	11/7/2011	AM	50	10.0	89.7	8.96	1.49
	Bedroom	5 Feet	MA06-1312	11/7/2011	AM	50	10.1	92.9	9.23	1.53
	Bedroom	5 Feet	MA06-1356	11/7/2011	PM	50	10.2	65.0	6.40	1.07
	Bedroom	5 Feet	MA06-1357	11/7/2011	PM	50	10.2	58.4	5.73	0.953
	Bedroom	5 Feet	MA07-1313	11/8/2011	AM	50	10.0	90.3	9.02	1.50
	Bedroom	5 Feet	MA07-1314	11/8/2011	AM	50	10.0	98.5	9.84	1.64
	Bedroom	5 Feet	MA07-1358	11/8/2011	PM	50	10.0	64.1	6.40	1.06
	Bedroom	5 Feet	MA07-1359	11/8/2011	PM	50	10.0	58.2	5.80	0.965

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample

^b Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 8. Air Sample Data for Hotel Rooms with the Bathroom Door Closed –Fall Monitoring Period

Room #	Sample Location	Sample Position	Sample ID	Sample Date	AM/ PM	Sample Length (Minutes)	Sample Volume (Liters)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ Liter)	Results (Parts Per Million <i>p</i> -DCB)
13	Bedroom	Floor	MA01-1316	11/2/2011	AM	50	10.0	67.1	6.69	1.11
	Bedroom	Floor	MA01-1317	11/2/2011	AM	50	10.0	70.4	7.03	1.17
	Bedroom	Floor	MA01-1361	11/2/2011	PM	50	10.0	38.1	3.81	0.633
	Bedroom	Floor	MA01-1362	11/2/2011	PM	50	10.0	38.3	3.82	0.636
	Bedroom	Floor	MA02-1318	11/3/2011	AM	50	10.0	52.2	5.22	0.868
	Bedroom	Floor	MA02-1319	11/3/2011	AM	50	10.6	48.5	4.57	0.760
	Bedroom	Floor	MA02-1363	11/3/2011	PM	50	10.7	37.6	3.52	0.586
	Bedroom	Floor	MA02-1364	11/3/2011	PM	50	10.0	39.3	3.93	0.653
	Bedroom	Floor	MA03-1320	11/4/2011	AM	50	10.0	79.9	7.97	1.33
	Bedroom	Floor	MA03-1321	11/4/2011	AM	50	10.6	75.9	7.15	1.19
	Bedroom	Floor	MA03-1365	11/4/2011	PM	50	10.7	50.1	4.68	0.778
	Bedroom	Floor	MA03-1366	11/4/2011	PM	50	10.1	3083	304	50.6
	Bedroom	Floor	MA04-1322	11/5/2011	AM	50	10.6	84.1	7.95	1.32
	Bedroom	Floor	MA04-1323	11/5/2011	AM	50	10.0	3314	331	55.1
	Bedroom	Floor	MA04-1367	11/5/2011	PM	55	11.1	79.2	7.15	1.19
	Bedroom	Floor	MA04-1368	11/5/2011	PM	53	10.7	74.8	6.96	1.16
	Bedroom	Floor	MA05-1324	11/6/2011	AM	51	10.3	76.1	7.37	1.23
	Bedroom	Floor	MA05-1325	11/6/2011	AM	50	10.0	71.9	7.19	1.20
	Bedroom	Floor	MA05-1369	11/6/2011	PM	58	11.8	57.7	4.89	0.814
	Bedroom	Floor	MA05-1370	11/6/2011	PM	59	11.8	57.3	4.85	0.807
	Bedroom	Floor	MA06-1326	11/7/2011	AM	50	10.0	86.0	8.59	1.43
	Bedroom	Floor	MA06-1327	11/7/2011	AM	50	10.0	83.2	8.30	1.38
	Bedroom	Floor	MA06-1371	11/7/2011	PM	50	10.1	54.0	5.35	0.889
	Bedroom	Floor	MA06-1372	11/7/2011	PM	52	10.4	55.3	5.30	0.881
	Bedroom	Floor	MA07-1328	11/8/2011	AM	50	10.0	97.8	9.76	1.62
	Bedroom	Floor	MA07-1329	11/8/2011	AM	50	10.0	78.4	7.83	1.30
	Bedroom	Floor	MA07-1373	11/8/2011	PM	50	10.0	50.3	5.02	0.835
	Bedroom	Floor	MA07-1374	11/8/2011	PM	51	10.3	51.0	4.96	0.824

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample

^b Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 9. Wool Fabric Sample Data for Hotel Bathrooms – Summer Monitoring Period

Room #	Bathroom Type	Sample Position in Bathroom	Sample ID	Sample Date	Wool Sample Weight (g)	Results ^a (µg <i>p</i> -DCB/Sample)	Results (µg <i>p</i> -DCB/g Wool Fabric)
7	Control	Floor	MW07-0761	8/30/2011	5.01	ND ^b	0.120
	Control	Floor	MW07-0762	8/30/2011	5.09	ND	0.118
	Control	Floor	MW07-0763	8/30/2011	5.27	ND	0.114
	Control	2 Feet	MW07-0731	8/30/2011	4.82	ND	0.124
	Control	2 Feet	MW07-0732	8/30/2011	5.00	ND	0.120
	Control	2 Feet	MW07-0733	8/30/2011	4.74	ND	0.127
	Control	5 Feet	MW07-0701	8/30/2011	4.70	ND	0.128
	Control	5 Feet	MW07-0702	8/30/2011	4.88	ND	0.123
	Control	5 Feet	MW07-0703	8/30/2011	4.74	ND	0.127
1	Open	Floor	MW07-0161	8/30/2011	5.06	734	145
	Open	Floor	MW07-0162	8/30/2011	5.14	808	157
	Open	Floor	MW07-0163	8/30/2011	4.97	647	130
	Open	2 Feet	MW07-0131	8/30/2011	4.92	699	142
	Open	2 Feet	MW07-0132	8/30/2011	4.80	668	139
	Open	2 Feet	MW07-0133	8/30/2011	5.04	764	152
	Open	5 Feet	MW07-0101	8/30/2011	5.06	1240	245
	Open	5 Feet	MW07-0102	8/30/2011	4.90	1168	238
	Open	5 Feet	MW07-0103	8/30/2011	5.06	1155	228
2	Open	Floor	MW07-0261	8/30/2011	5.08	959	189
	Open	Floor	MW07-0262	8/30/2011	5.10	1272	249
	Open	Floor	MW07-0263	8/30/2011	5.16	932	181
	Open	2 Feet	MW07-0231	8/30/2011	5.24	952	182
	Open	2 Feet	MW07-0232	8/30/2011	4.96	1084	219
	Open	2 Feet	MW07-0233	8/30/2011	4.78	731	153
	Open	5 Feet	MW07-0201	8/30/2011	4.59	760	166
	Open	5 Feet	MW07-0202	8/30/2011	4.83	1277	264
	Open	5 Feet	MW07-0203	8/30/2011	5.06	874	173
3	Open	Floor	MW07-0361	8/30/2011	4.91	698	142
	Open	Floor	MW07-0362	8/30/2011	5.07	805	159
	Open	Floor	MW07-0363	8/30/2011	4.81	806	168
	Open	2 Feet	MW07-0331	8/30/2011	5.26	874	166
	Open	2 Feet	MW07-0332	8/30/2011	4.74	765	161
	Open	2 Feet	MW07-0333	8/30/2011	4.92	816	166
	Open	5 Feet	MW07-0301	8/30/2011	4.58	964	210
	Open	5 Feet	MW07-0302	8/30/2011	4.72	1017	215
	Open	5 Feet	MW07-0303	8/30/2011	5.55	1275	230
4	Closed	Floor	MW07-0461	8/30/2011	4.26	2789	655
	Closed	Floor	MW07-0462	8/30/2011	4.16	2375	571
	Closed	Floor	MW07-0463	8/30/2011	4.99	2988	599
	Closed	2 Feet	MW07-0431	8/30/2011	4.00	2501	625
	Closed	2 Feet	MW07-0432	8/30/2011	3.92	2489	635
	Closed	2 Feet	MW07-0433	8/30/2011	3.93	2382	606
	Closed	5 Feet	MW07-0401	8/30/2011	3.87	2199	568
	Closed	5 Feet	MW07-0402	8/30/2011	4.00	2143	536
	Closed	5 Feet	MW07-0403	8/30/2011	4.23	2669	631

^a LOD: 1.2 µg/sample; LOQ: 3.6 µg/sample.

^b ND: < 1.2 µg/sample; we used ½ LOD to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 9. Wool Fabric Sample Data for Hotel Bathrooms – Summer Monitoring Period

Room #	Bathroom Type	Sample Position in Bathroom	Sample ID	Sample Date	Wool Sample Weight (g)	Results ^a (µg <i>p</i> -DCB/Sample)	Results (µg <i>p</i> -DCB/g Wool Fabric)
5	Closed	Floor	MW07-0561	8/30/2011	4.44	2943	663
	Closed	Floor	MW07-0562	8/30/2011	4.37	2483	568
	Closed	Floor	MW07-0563	8/30/2011	5.08	2649	521
	Closed	2 Feet	MW07-0531	8/30/2011	4.89	3116	637
	Closed	2 Feet	MW07-0532	8/30/2011	4.36	2762	633
	Closed	2 Feet	MW07-0533	8/30/2011	4.90	3300	673
	Closed	5 Feet	MW07-0501	8/30/2011	5.00	3088	618
	Closed	5 Feet	MW07-0502	8/30/2011	4.80	3030	631
	Closed	5 Feet	MW07-0503	8/30/2011	4.86	3020	621
6	Closed	Floor	MW07-0661	8/30/2011	3.83	4469	1,167
	Closed	Floor	MW07-0662	8/30/2011	4.07	4347	1,068
	Closed	Floor	MW07-0663	8/30/2011	3.82	4227	1,107
	Closed	2 Feet	MW07-0631	8/30/2011	4.24	4699	1,108
	Closed	2 Feet	MW07-0632	8/30/2011	4.63	5182	1,119
	Closed	2 Feet	MW07-0633	8/30/2011	4.24	4522	1,067
	Closed	5 Feet	MW07-0601	8/30/2011	4.23	4832	1,142
	Closed	5 Feet	MW07-0602	8/30/2011	4.30	5106	1,187
	Closed	5 Feet	MW07-0603	8/30/2011	4.42	5476	1,239

^a LOD: 1.2 µg/sample; LOQ: 3.6 µg/sample.

^b ND: < 1.2 µg/sample; we used ½ LOD to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 10. Wool Fabric Sample Data for Hotel Bathrooms – Fall Monitoring Period

Room #	Bathroom Type	Sample Position in Bathroom	Sample ID	Sample Date	Wool Sample Weight (g)	Results ^a (µg <i>p</i> -DCB/ Sample)	Results (µg <i>p</i> -DCB/ g Wool Fabric)
14	Control	Floor	MW07-1461	11/8/2011	4.04	2.25 ^b	0.557
	Control	Floor	MW07-1462	11/8/2011	4.59	2.77 ^b	0.603
	Control	Floor	MW07-1463	11/8/2011	3.96	2.15 ^b	0.543
	Control	2 Feet	MW07-1431	11/8/2011	4.20	2.08 ^b	0.495
	Control	2 Feet	MW07-1432	11/8/2011	4.79	2.64 ^b	0.551
	Control	2 Feet	MW07-1433	11/8/2011	4.25	2.29 ^b	0.539
	Control	5 Feet	MW07-1401	11/8/2011	4.59	2.36 ^b	0.514
	Control	5 Feet	MW07-1402	11/8/2011	4.11	2.18 ^b	0.530
	Control	5 Feet	MW07-1403	11/8/2011	4.47	2.27 ^b	0.508
8	Open	Floor	MW07-0861	11/8/2011	4.40	378	85.9
	Open	Floor	MW07-0862	11/8/2011	4.61	429	93.1
	Open	Floor	MW07-0863	11/8/2011	4.30	394	91.6
	Open	2 Feet	MW07-0831	11/8/2011	4.59	449	97.8
	Open	2 Feet	MW07-0832	11/8/2011	4.05	322	79.5
	Open	2 Feet	MW07-0833	11/8/2011	4.68	403	86.1
	Open	5 Feet	MW07-0801	11/8/2011	4.66	545	117
	Open	5 Feet	MW07-0802	11/8/2011	4.23	557	132
	Open	5 Feet	MW07-0803	11/8/2011	4.07	441	108
9	Open	Floor	MW07-0961	11/8/2011	4.33	423	97.7
	Open	Floor	MW07-0962	11/8/2011	4.69	463	98.7
	Open	Floor	MW07-0963	11/8/2011	4.01	391	97.5
	Open	2 Feet	MW07-0931	11/8/2011	4.60	469	102
	Open	2 Feet	MW07-0932	11/8/2011	4.37	431	98.6
	Open	2 Feet	MW07-0933	11/8/2011	4.05	395	97.5
	Open	5 Feet	MW07-0901	11/8/2011	4.37	455	104
	Open	5 Feet	MW07-0902	11/8/2011	4.73	622	132
	Open	5 Feet	MW07-0903	11/8/2011	4.16	521	125
10	Open	Floor	MW07-1061	11/8/2011	4.80	600	125
	Open	Floor	MW07-1062	11/8/2011	5.08	626	123
	Open	Floor	MW07-1063	11/8/2011	4.66	566	121
	Open	2 Feet	MW07-1031	11/8/2011	4.30	536	125
	Open	2 Feet	MW07-1032	11/8/2011	4.52	512	113
	Open	2 Feet	MW07-1033	11/8/2011	4.25	474	112
	Open	5 Feet	MW07-1001	11/8/2011	4.21	501	119
	Open	5 Feet	MW07-1002	11/8/2011	4.73	920	195
	Open	5 Feet	MW07-1003	11/8/2011	4.43	865	195
11	Closed	Floor	MW07-1161	11/8/2011	4.65	3153	678
	Closed	Floor	MW07-1162	11/8/2011	4.01	2366	590
	Closed	Floor	MW07-1163	11/8/2011	4.55	3599	791
	Closed	2 Feet	MW07-1131	11/8/2011	4.38	3572	816
	Closed	2 Feet	MW07-1132	11/8/2011	4.76	4256	894
	Closed	2 Feet	MW07-1133	11/8/2011	4.61	4219	915
	Closed	5 Feet	MW07-1101	11/8/2011	4.48	2975	664
	Closed	5 Feet	MW07-1102	11/8/2011	4.69	3270	697
	Closed	5 Feet	MW07-1103	11/8/2011	4.29	2933	684

^a LOD: 1.2 µg/sample; LOQ: 3.6 µg/sample.

^b Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 10. Wool Fabric Sample Data for Hotel Bathrooms – Fall Monitoring Period

Room #	Bathroom Type	Sample Position in Bathroom	Sample ID	Sample Date	Wool Sample Weight (g)	Results ^a (µg <i>p</i> -DCB/Sample)	Results (µg <i>p</i> -DCB/g Wool Fabric)
12	Closed	Floor	MW07-1261	11/8/2011	4.91	1938	395
	Closed	Floor	MW07-1262	11/8/2011	4.65	1915	412
	Closed	Floor	MW07-1263	11/8/2011	5.09	1941	381
	Closed	2 Feet	MW07-1231	11/8/2011	4.79	2060	430
	Closed	2 Feet	MW07-1232	11/8/2011	4.65	2070	445
	Closed	2 Feet	MW07-1233	11/8/2011	5.16	2284	443
	Closed	5 Feet	MW07-1201	11/8/2011	5.04	1811	359
	Closed	5 Feet	MW07-1202	11/8/2011	5.06	2044	404
	Closed	5 Feet	MW07-1203	11/8/2011	5.06	1840	364
13	Closed	Floor	MW07-1361	11/8/2011	5.10	2991	586
	Closed	Floor	MW07-1362	11/8/2011	5.17	2818	545
	Closed	Floor	MW07-1363	11/8/2011	4.88	1878	385
	Closed	2 Feet	MW07-1331	11/8/2011	4.87	2449	503
	Closed	2 Feet	MW07-1332	11/8/2011	4.97	2567	516
	Closed	2 Feet	MW07-1333	11/8/2011	4.69	2438	520
	Closed	5 Feet	MW07-1301	11/8/2011	4.39	2052	467
	Closed	5 Feet	MW07-1302	11/8/2011	5.23	2437	466
	Closed	5 Feet	MW07-1303	11/8/2011	4.25	2038	480

Appendix 11. *p*-DCB Spiked^a Air Sample Data

Sample ID	Sample Date	Results (µg <i>p</i> -DCB/Sample)
MA07-0041	8/30/2011	2074
MA07-0042	8/30/2011	1968
MA07-0043	8/30/2011	1947
MA07-0044	8/30/2011	1880
MA07-0045	8/30/2011	1833
MA07-0046	8/30/2011	1760
MA07-0051	11/8/2011	1984
MA07-0052	11/8/2011	1956
MA07-0053	11/8/2011	2019
MA07-0054	11/8/2011	2128
MA07-0055	11/8/2011	2049
MA07-0056	11/8/2011	2068

^a Samples spiked with 100 µL of 20mg/mL *p*-DCB in hexane; charcoal tubes attached to pumps; pumps run for 3 minutes.

^a LOD: 1.2 µg/sample; LOQ: 3.6 µg/sample.

^b Estimated result that is between the LOD and LOQ. We used these result to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 12. Wool Fabric Field Blanks and *p*-DCB Spiked Samples Data

Sample ID	Sample Date	Results ^a (µg <i>p</i> -DCB/ Sample)	Wool Sample Weight (g)	µg <i>p</i> -DCB/ g Wool Fabric	Comments
MW00-0001	8/30/2011	ND ^b	4.06	0.148	Field Blank - wool with 100 µL hexane.
MW00-0002	8/30/2011	ND	4.32	0.139	Field Blank - wool with 100 µL hexane.
MW00-0003	8/30/2011	ND	4.08	0.147	Field Blank - wool with 100 µL hexane.
MW00-0004	8/30/2011	ND			Field Blank - 100 µL hexane.
MW07-0011	8/30/2011	910	4.30	212	Field Spike - 10 mL of 0.1 mg <i>p</i> -DCB/mL hexane. Additional hexane added after 10 minutes.
MW07-0012	8/30/2011	894	4.47	200	Field Spike - 10 mL of 0.1 mg <i>p</i> -DCB/mL hexane. Additional hexane added after 10 minutes.
MW07-0013	8/30/2011	906	4.37	207	Field Spike - 10 mL of 0.1 mg <i>p</i> -DCB/mL hexane. Additional hexane added after 10 minutes.
MW07-0021	8/30/2011	910	4.28	213	Field Spike - 10 mL of 0.1 mg <i>p</i> -DCB/mL hexane after addition of hexane.
MW07-0022	8/30/2011	914	4.26	215	Field Spike - 10 mL of 0.1 mg <i>p</i> -DCB/mL hexane after addition of hexane.
MW07-0023	8/30/2011	897	4.00	224	Field Spike - 10 mL of 0.1 mg <i>p</i> -DCB/mL hexane after addition of hexane.
MW07-0025	11/8/2011	3.76	5.36	0.701	Field Blank - wool with 100 µL hexane.
MW07-0026	11/8/2011	2.45	4.95	0.495	Field Blank - wool with 100 µL hexane.
MW07-0027	11/8/2011	2.72	5.40	0.504	Field Blank - wool with 100 µL hexane.
MW07-0035	11/8/2011	907	5.23	173	Field Spike - 1 mL of 1.0 mg <i>p</i> -DCB/mL hexane. Additional hexane added after 8 minutes.
MW07-0036	11/8/2011	959	5.08	189	Field Spike - 1 mL of 1.0 mg <i>p</i> -DCB/mL hexane. Additional hexane added after 8 minutes.
MW07-0037	11/8/2011	954	5.18	184	Field Spike - 1 mL of 1.0 mg <i>p</i> -DCB/mL hexane. Additional hexane added after 8 minutes.
MW07-0045	11/8/2011	974	5.02	194	Field Spike - 1 mL of 1.0 mg <i>p</i> -DCB/mL hexane after addition of hexane.
MW07-0046	11/8/2011	936	4.79	195	Field Spike - 1 mL of 1.0 mg <i>p</i> -DCB/mL hexane after addition of hexane.
MW07-0047	11/8/2011	928	5.00	186	Field Spike - 1 mL of 1.0 mg <i>p</i> -DCB/mL hexane after addition of hexane.
MW07-0065	11/8/2011	950	4.96	192	Field spike from ampule with <i>p</i> -DCB.
MW07-0066	11/8/2011	952	5.10	187	Field spike from ampule with <i>p</i> -DCB.
MW07-0067	11/8/2011	950	4.83	197	Field spike from ampule with <i>p</i> -DCB.

^a LOD: 1.2 µg/sample; LOQ: 3.6 µg/sample.

^b ND: < 1.2 µg/sample; we used ½ LOD to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 12. Wool Fabric Field Blanks and *p*-DCB Spiked Samples Data

Sample ID	Sample Date	Results ^a (µg <i>p</i> -DCB/ Sample)	Wool Sample Weight (g)	µg <i>p</i> -DCB/ g Wool Fabric	Comments
MW07-0075	11/8/2011	ND	-	-	Field Blank - 100 µL hexane.
MW07-0076	11/8/2011	ND	-	-	Field Blank - 100 µL hexane.
MW07-0077	11/8/2011	ND	-	-	Field Blank - 100 µL hexane.

^a LOD: 1.2 µg/sample; LOQ: 3.6 µg/sample.

^b ND: < 1.2 µg/sample; we used ½ LOD to calculate the concentrations.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 13. Laboratory QC – Air Data

QC ID	QC Type	Standard ID	Standard Concentration	Aliquot (mL)	Spike Concentration (µg/Sample)	Date Extracted	Final Volume (mL)	Date Analyzed	Results ^a (µg/Sample)	% Recovery
082911 MB	Matrix Blank					8/29/2011	10	8/29/2011	ND	
083011 MB	Matrix Blank					8/30/2011	10	8/30/2011	ND	
083011 SA	Matrix Spike	SF_0410	20 mg/mL	0.01	200	8/30/2011	40	8/30/2011	196	97.8
083011 SB	Matrix Spike	SF_0410	20 mg/mL	0.01	200	8/30/2011	40	8/30/2011	200	100.1
083011 SC	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	8/30/2011	200	8/30/2011	1924	96.2
083011 SD	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	8/30/2011	200	8/30/2011	1995	99.7
083111 MB	Matrix Blank					8/31/2011	10	8/31/2011	ND	
083111 SA	Matrix Spike	SF_0410	20 mg/mL	0.01	200	8/31/2011	40	8/31/2011	186	93.2
083111 SB	Matrix Spike	SF_0410	20 mg/mL	0.01	200	8/31/2011	40	8/31/2011	198	98.8
083111 SC	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	8/31/2011	200	8/31/2011	1976	98.8
090111 MB	Matrix Blank					9/1/2011	10	9/1/2011	ND	
090111 SA	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/1/2011	40	9/1/2011	194	97.1
090111 SB	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/1/2011	40	9/1/2011	195	97.3
090111 SC	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/1/2011	400	9/1/2011	2000	100.0
090211 MB	Matrix Blank					9/2/2011	10	9/2/2011	ND	
090211 SA	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/2/2011	40	9/2/2011	178	88.9
090211 SB	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/2/2011	40	9/2/2011	173	86.7
090211 SC	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/2/2011	410	9/2/2011	2039	102.0
090211 SD	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/2/2011	410	9/2/2011	1962	98.1
090811 MB	Matrix Blank					9/8/2011	10	9/8/2011	ND	
090811 SA	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/8/2011	40	9/8/2011	195	97.5
090811 SB	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/8/2011	40	9/8/2011	188	94.2
090811 SC	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/8/2011	410	9/8/2011	1991	99.5
090811 SD	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/8/2011	410	9/8/2011	1929	96.5
090911 MB	Matrix Blank					9/9/2011	10	9/9/2011	ND	
090911 SA	Matrix Spike	SF_0415	200 µg/mL	0.005	1	9/9/2011	10	9/9/2011	0.87	87.0
090911 SB	Matrix Spike	SF_0415	200 µg/mL	0.005	1	9/9/2011	10	9/9/2011	0.87	87.0
090911 SC	Matrix Spike	SF_0415	200 µg/mL	0.05	10	9/9/2011	10	9/9/2011	9.31	93.1
090911 SD	Matrix Spike	SF_0415	200 µg/mL	0.05	10	9/9/2011	10	9/9/2011	9.38	93.8
091211 MB	Matrix Blank					9/12/2011	10	9/13/2011	ND	
091211 SA	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/12/2011	40	9/13/2011	195.7	97.8
091211 SB	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/12/2011	40	9/13/2011	190.5	95.2

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 13. Laboratory QC – Air Data

QC ID	QC Type	Standard ID	Standard Concentration	Aliquot (mL)	Spike Concentration (µg/Sample)	Date Extracted	Final Volume (mL)	Date Analyzed	Results ^a (µg/Sample)	% Recovery
091211 SC	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/12/2011	410	9/13/2011	1877	93.8
091211 SD	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/12/2011	410	9/13/2011	1828	91.4
091411 MB	Matrix Blank					9/14/2011	10	9/14/2011	ND	
091411 SA	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/14/2011	40	9/14/2011	183.0	91.5
091411 SB	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/14/2011	40	9/14/2011	182.7	91.3
091411 SC	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/14/2011	410	9/14/2011	2011	100.6
091411 SD	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/14/2011	410	9/14/2011	1949	97.4
091511 MB	Matrix Blank					9/15/2011	10	9/15/2011	ND	
091511 SA	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/15/2011	40	9/15/2011	196.7	98.4
091511 SB	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/15/2011	40	9/15/2011	193.2	96.6
091511 SC	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/15/2011	410	9/15/2011	1994	99.7
091511 SD	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/15/2011	410	9/15/2011	1933	96.7
091611 MB	Matrix Blank					9/16/2011	10	9/16/2011	ND	
091611 SA	Matrix Spike	SF_0415	200 µg/mL	0.005	1	9/16/2011	10	9/16/2011	0.82	82.0
091611 SB	Matrix Spike	SF_0415	200 µg/mL	0.005	1	9/16/2011	10	9/16/2011	0.82	82.0
091611 SC	Matrix Spike	SF_0415	200 µg/mL	0.05	10	9/16/2011	10	9/16/2011	8.69	86.9
091611 SD	Matrix Spike	SF_0415	200 µg/mL	0.05	10	9/16/2011	10	9/16/2011	8.07	80.7
092011 MB	Matrix Blank					9/20/2011	10	9/26/2011	2.0	
092011 SA	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/20/2011	40	9/26/2011	198	98.8
092011 SB	Matrix Spike	SF_0410	20 mg/mL	0.01	200	9/20/2011	40	9/26/2011	199	99.7
092011 SC	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/20/2011	410	9/26/2011	1969	98.5
092011 SD	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	9/20/2011	410	9/26/2011	1922	96.1
101811 MB	Matrix Blank					10/18/2011	10	10/18/2011	ND	
101811 SA	Matrix Spike	SF_0410	20 mg/mL	0.01	200	10/18/2011	40	10/18/2011	170	85.0
101811 SB	Matrix Spike	SF_0410	20 mg/mL	0.01	200	10/18/2011	40	10/18/2011	169	84.7
101811 SC	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	10/18/2011	410	10/18/2011	1896	94.8
101811 SD	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	10/18/2011	410	10/18/2011	1697	84.9
102011 MB	Matrix Blank					10/20/2011	10	10/20/2011	ND	
102011 SA	Matrix Spike	SF_0410	20 mg/mL	0.01	200	10/20/2011	40	10/20/2011	172	86.0
102011 SB	Matrix Spike	SF_0410	20 mg/mL	0.01	200	10/20/2011	40	10/20/2011	179	89.5
102011 SC	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	10/20/2011	410	10/20/2011	1815	90.8
102011 SD	Matrix Spike	SF_0410	20 mg/mL	0.1	2000	10/20/2011	410	10/20/2011	1926	96.3

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 13. Laboratory QC – Air Data

QC ID	QC Type	Standard ID	Standard Concentration	Aliquot (mL)	Spike Concentration (µg/Sample)	Date Extracted	Final Volume (mL)	Date Analyzed	Results ^a (µg/Sample)	% Recovery
102011 SE	Matrix Spike	SF_0410	20 mg/mL	0.2	4000	10/20/2011	1000	10/20/2011	3588	89.7
102011 SF	Matrix Spike	SF_0410	20 mg/mL	0.2	4000	10/20/2011	1000	10/20/2011	3818	95.5
102411 MB	Matrix Blank						10	10/24/2011	ND	
102411 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	10/24/2011	40	10/24/2011	187	93.5
102411 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	10/24/2011	40	10/24/2011	181	90.5
102411 SC	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	10/24/2011	1000	10/24/2011	3747	93.7
102411 SD	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	10/24/2011	1000	10/24/2011	3887	97.2
102511 MB	Matrix Blank					10/25/2011	10	10/25/2011	0.2	
102511 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	10/25/2011	40	10/25/2011	174	87.0
102511 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	10/25/2011	40	10/25/2011	180	89.9
102511 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	10/25/2011	410	10/25/2011	1999	100.0
102511 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	10/25/2011	410	10/25/2011	1946	97.3
102611 MB	Matrix Blank					10/26/2011	10	10/26/2011	ND	
102611 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	10/26/2011	40	10/26/2011	181	90.3
102611 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	10/26/2011	40	10/26/2011	180	89.9
102611 SC	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	10/26/2011	1000	10/26/2011	3870	96.8
102611 SD	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	10/26/2011	1000	10/26/2011	3810	95.3
102711 MB	Matrix Blank					10/27/2011	10	10/27/2011	ND	
102711 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	10/27/2011	40	10/27/2011	188	94.0
102711 SB	Matrix Spike	SF_0455	20 mg/mL	0.01	200	10/27/2011	40	10/27/2011	179	89.6
102711 SC	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	10/27/2011	1000	10/27/2011	4055	101.4
102711 SD	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	10/27/2011	1000	10/27/2011	3848	96.2
103111 MB	Matrix Blank					10/31/2011	10	10/31/2011	ND	
103111 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	10/31/2011	40	10/31/2011	205	102.5
103111 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	10/31/2011	40	10/31/2011	198	98.8
103111 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	10/31/2011	1000	10/31/2011	2015	100.7
103111 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	10/31/2011	1000	10/31/2011	2050	102.5
110211 MB	Matrix Blank					11/2/2011	10	11/2/2011	ND	
110211 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/2/2011	40	11/2/2011	198	98.9
110211 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/2/2011	40	11/2/2011	202	100.8
110211 SC	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	11/2/2011	1000	11/2/2011	4136	103.4
110211 SD	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	11/2/2011	1000	11/2/2011	4177	104.4

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 13. Laboratory QC – Air Data

QC ID	QC Type	Standard ID	Standard Concentration	Aliquot (mL)	Spike Concentration (µg/Sample)	Date Extracted	Final Volume (mL)	Date Analyzed	Results ^a (µg/Sample)	% Recovery
110311 MB	Matrix Blank					11/3/2011	10	11/3/2011	ND	
110311 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/3/2011	40	11/3/2011	199.8	99.9
110311 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/3/2011	40	11/3/2011	200.1	100.0
110311 SC	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	11/3/2011	1000	11/3/2011	4250	106.3
110311 SD	Matrix Spike	SF_0455	20 mg/mL	0.2	4000	11/3/2011	1000	11/3/2011	4221	105.5
110811 MB	Matrix Blank					11/8/2011	10	11/8/2011	ND	
110811 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/8/2011	40	11/8/2011	190.7	95.4
110811 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/8/2011	40	11/8/2011	193.5	96.8
110811 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	11/8/2011	410	11/8/2011	2025	101.2
110811 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	11/8/2011	410	11/8/2011	1998	99.9
111011 MB	Matrix Blank					11/10/2011	10	11/10/2011	ND	
111011 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/10/2011	40	11/10/2011	183.3	91.7
111011 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/10/2011	40	11/10/2011	187.6	93.8
111011 SC	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	11/10/2011	1000	11/10/2011	4047	101.2
111011 SD	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	11/10/2011	1000	11/10/2011	3796	94.9
111411 MB	Matrix Blank					11/14/2011	10	11/15/2011	ND	
111411 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/14/2011	40	11/15/2011	173.6	86.8
111411 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/14/2011	40	11/15/2011	174.3	87.2
111411 SC	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	11/14/2011	1000	11/15/2011	3753	93.8
111411 SD	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	11/14/2011	1000	11/15/2011	3706	92.7
111811 MB	Matrix Blank					11/18/2011	10	11/18/2011	ND	
111811 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/18/2011	40	11/18/2011	191.0	95.5
111811 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/18/2011	40	11/18/2011	191.2	95.6
111811 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	11/18/2011	410	11/18/2011	1828	91.4
111811 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	11/18/2011	410	11/18/2011	1995	99.8
112211 MB	Matrix Blank					11/22/2011	10	11/23/2011	ND	
112211 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/22/2011	40	11/23/2011	193	96.6
112211 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/22/2011	40	11/23/2011	194	96.8
112211 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	11/22/2011	410	11/23/2011	1963	98.2
112211 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	11/22/2011	410	11/23/2011	2013	100.7
112311 MB	Matrix Blank					11/23/2011	10	11/23/2011	ND	
112311 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/23/2011	40	11/23/2011	195.9	98.0

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 13. Laboratory QC – Air Data

QC ID	QC Type	Standard ID	Standard Concentration	Aliquot (mL)	Spike Concentration (µg/Sample)	Date Extracted	Final Volume (mL)	Date Analyzed	Results ^a (µg/Sample)	% Recovery
112311 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	11/23/2011	40	11/23/2011	190.5	95.3
112311 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	11/23/2011	410	11/23/2011	1967	98.4
112311 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	11/23/2011	410	11/23/2011	1860	93.0
112811 MB	Matrix Blank					11/28/2011	10	11/28/2011	ND	
112811 SA	Matrix Spike	SF_0451	200 µg/mL	0.005	1	11/28/2011	10	11/28/2011	1.03	103.0
112811 SB	Matrix Spike	SF_0451	200 µg/mL	0.005	1	11/28/2011	10	11/28/2011	0.95	95.0
112811 SC	Matrix Spike	SF_0451	200 µg/mL	0.05	10	11/28/2011	10	11/28/2011	10.3	102.9
112811 SD	Matrix Spike	SF-0451	200 µg/mL	0.05	10	11/28/2011	10	11/28/2011	10.4	104.3
112911 MB	Matrix Blank					11/29/2011	10	11/29/2011	ND	
112911 SA	Matrix Spike	SF_0451	200 µg/mL	0.005	1	11/29/2011	10	11/29/2011	0.95	95.0
112911 SB	Matrix Spike	SF_0451	200 µg/mL	0.005	1	11/29/2011	10	11/29/2011	0.85	85.0
112911 SC	Matrix Spike	SF_0451	200 µg/mL	0.005	1	11/29/2011	10	11/29/2011	0.89	89.0
112911 SD	Matrix Spike	SF_0451	200 µg/mL	0.05	10	11/29/2011	10	11/29/2011	9.80	98.0
112911 SE	Matrix Spike	SF_0451	200 µg/mL	0.05	10	11/29/2011	10	11/29/2011	9.37	93.7
112911 SF	Matrix Spike	SF_0451	200 µg/mL	0.05	10	11/29/2011	10	11/29/2011	9.03	90.3
120111 MB	Matrix Blank					12/1/2011	10	12/2/2011	ND	
120111 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	12/1/2011	40	12/2/2011	196.3	98.2
120111 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	12/1/2011	40	12/2/2011	198.5	99.3
120111 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	12/1/2011	410	12/2/2011	1971	98.6
120111 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	12/1/2011	410	12/2/2011	2019	101.0
120711 MB	Matrix Blank					12/7/2011	10	12/9/2011	ND	
120711 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	12/7/2011	40	12/9/2011	194.6	97.3
120711 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	12/7/2011	40	12/9/2011	196.0	98.0
120711 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	12/7/2011	410	12/9/2011	1997	99.9
120711 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	12/7/2011	410	12/9/2011	2017	100.9
121211 MB	Matrix Blank					12/12/2011	10	12/13/2011	ND	
121211 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	12/12/2011	40	12/13/2011	178.9	89.5
121211 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	12/12/2011	40	12/13/2011	183.0	91.5
121211 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	12/12/2011	410	12/13/2011	1856	92.8
121211 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	12/12/2011	410	12/13/2011	1875	93.8
121411 MB	Matrix Blank					12/14/2011	10	12/15/2011	ND	
121411 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	12/14/2011	40	12/15/2011	199.3	99.7

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 13. Laboratory QC – Air Data

QC ID	QC Type	Standard ID	Standard Concentration	Aliquot (mL)	Spike Concentration (µg/Sample)	Date Extracted	Final Volume (mL)	Date Analyzed	Results ^a (µg/Sample)	% Recovery
121411 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	12/14/2011	40	12/15/2011	190.8	95.4
121411 SC	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	12/14/2011	1000	12/15/2011	3858	96.5
121411 SD	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	12/14/2011	1000	12/15/2011	3707	92.7
121911 MB	Matrix Blank					12/19/2011	10	12/19/2011	ND	
121911 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	12/19/2011	40	12/19/2011	196.5	98.3
121911 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	12/19/2011	40	12/19/2011	191.1	95.6
121911 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	12/19/2011	1000	12/19/2011	2030	101.5
121911 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	12/19/2011	1000	12/19/2011	1945	97.3
011012 MB	Matrix Blank					1/10/2012	10	1/10/2012	ND ^b	
011012 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/10/2012	40	1/10/2012	196	98.0
011012 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/10/2012	40	1/10/2012	194	97.0
011012 SC	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	1/10/2012	1000	1/10/2012	4009	100.2
011012 SD	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	1/10/2012	1000	1/10/2012	4183	104.6
011212 MB	Matrix Blank					1/12/2012	10	1/13/2012	ND	
011212 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/12/2012	40	1/13/2012	168.8	84.4
011212 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/12/2012	40	1/13/2012	170.2	85.1
011212 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	1/12/2012	410	1/13/2012	1800	90.0
011212 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	1/12/2012	410	1/13/2012	1823	91.2
011712 MB	Matrix Blank					1/17/2012	10	1/17/2012	ND	
011712 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/17/2012	40	1/17/2012	195.5	97.8
011712 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/17/2012	40	1/17/2012	184.6	92.3
011712 SC	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	1/17/2012	1000	1/17/2012	4132	103.3
011712 SD	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	1/17/2012	1000	1/17/2012	4209	105.2
011912 MB	Matrix Blank					1/19/2012	10	1/19/2012	ND	
011912 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/19/2012	40	1/19/2012	204.4	102.2
011912 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/19/2012	40	1/19/2012	197.9	99.0
011912 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	1/19/2012	410	1/19/2012	1942	97.1
011912 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	1/19/2012	410	1/19/2012	1966	98.3
012012 MB	Matrix Blank					1/20/2012	10	1/23/2012	ND	
012012 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/20/2012	40	1/23/2012	194.0	97.0
012012 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/20/2012	40	1/23/2012	183.5	91.8
012012 SC	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	1/20/2012	1000	1/24/2012	4275	106.9

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 13. Laboratory QC – Air Data

QC ID	QC Type	Standard ID	Standard Concentration	Aliquot (mL)	Spike Concentration (µg/Sample)	Date Extracted	Final Volume (mL)	Date Analyzed	Results ^a (µg/Sample)	% Recovery
012012 SD	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	1/20/2012	1000	1/24/2012	4171	104.3
012512 MB	Matrix Blank					1/25/2012	10	1/25/2012	ND	
012512 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/25/2012	40	1/25/2012	196.3	98.2
012512 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/25/2012	40	1/25/2012	199.5	99.8
012512 SC	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	1/25/2012	410	1/25/2012	1826	91.3
012512 SD	Matrix Spike	SF_0445	20 mg/mL	0.1	2000	1/25/2012	410	1/25/2012	1836	91.8
012612 MB	Matrix Blank					1/26/2012	10	1/27/2012	ND	
012612 SA	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/26/2012	40	1/26/2012	207.8	103.9
012612 SB	Matrix Spike	SF_0445	20 mg/mL	0.01	200	1/26/2012	40	1/26/2012	206.8	103.4
012612 SC	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	1/26/2012	1000	1/27/2012	3875	96.9
012612 SD	Matrix Spike	SF_0445	20 mg/mL	0.2	4000	1/26/2012	1000	1/27/2012	4002	100.1
012612 SE	Matrix Spike	SF_0445	20 mg/mL	0.3	6000	1/26/2012	1000	1/27/2012	5771	96.9
012612 SF	Matrix Spike	SF_0445	20 mg/mL	0.3	6000	1/26/2012	1000	1/27/2012	6328	105.5

^a LOD: 0.2 µg/sample; LOQ: 0.7 µg/sample.

^b ND: < 0.2 µg/sample.

**Air Concentrations and Fabric Uptake of *para*-Dichlorobenzene
Resulting from Simulated Home Use of Moth Cakes**

Appendix 14. Laboratory QC – Wool Data

QC ID	QC Type	Standard ID	Standard Concentration (mg/mL)	Aliquot Units	Spike Concentration (µg/Sample)	Date Extracted	Final Volume (mL)	Date Analyzed	Results ^a (µg/Sample)	% Recovery
100311SA	Matrix Spike	SF_0420	1	1 mL	1000	10/3/2011	160	10/4/2011	1045	104.5
100311SB	Matrix Spike	SF_0420	1	1 mL	1000	10/3/2011	160	10/4/2011	1047	104.7
093011MB	Matrix Blank						160	10/4/2011	ND ^b	
100511SA	Matrix Spike	SF_0444	2	2 mL	2000	10/5/2011	800	10/6/2011	2172	108.6
100511SB	Matrix Spike	SF_0444	2	2 mL	2000	10/5/2011	800	10/6/2011	2100	105.0
100611SC	Matrix Spike	SF_0444	4	4 mL	4000	10/6/2011	800	10/6/2011	4167	104.2
100611SD	Matrix Spike	SF_0444	4	4 mL	4000	10/6/2011	800	10/6/2011	4272	106.8
100611MB	Matrix Blank					10/6/2011	160	10/6/2011	ND	
092811SA	Matrix Spike	SF_0420	1	20 µL	20	9/28/2011	160	10/4/2011	20.3	101.5
092811SB	Matrix Spike	SF_0420	1	20 µL	20	9/28/2011	160	10/4/2011	20.9	104.5
092811SC	Matrix Spike	SF_0420	1	1 mL	1000	9/28/2011	160	10/4/2011	1138	113.8
092911SD	Matrix Spike	SF_0420	1	1 mL	1000	9/28/2011	160	10/4/2011	1104	110.4
092811MB	Matrix Blank					9/28/2011	160	10/4/2011	ND	
010312SA	Matrix Spike	SF_0457	1	2 mL	2000	1/3/2012	800	1/4/2012	1924	96.2
010312SB	Matrix Spike	SF_0457	1	2 mL	2000	1/3/2012	800	1/4/2012	1843	92.2
010312SC	Matrix Spike	SF_0457	1	5 mL	5000	1/3/2012	800	1/4/2012	4806	96.1
010312SD	Matrix Spike	SF_0457	1	5 mL	5000	1/3/2012	800	1/4/2012	4793	95.9
010312MB	Matrix Blank					12/27/2011	160	1/4/2012	ND	
122211SA	Matrix Spike	SF_0457	1.00	20 µL	20	12/22/2011	160	12/27/2011	19.7	98.4
122211SB	Matrix Spike	SF_0457	1.00	20 µL	20	12/22/2011	160	12/27/2011	20.0	100.0
122211SC	Matrix Spike	SF_0457	1.00	1 mL	1000	12/21/2011	160	12/27/2011	936	93.6
122211SD	Matrix Spike	SF_0457	1.00	1 mL	1000	12/21/2011	160	12/27/2011	980	98.0
122211MB	Matrix Blank					12/21/2011	160	12/27/2011	ND	

^a LOD: 1.2 µg/sample; LOQ: 3.6 µg/sample.

^b ND: < 1.2 µg/sample.